

The Modern Educator's Library

---

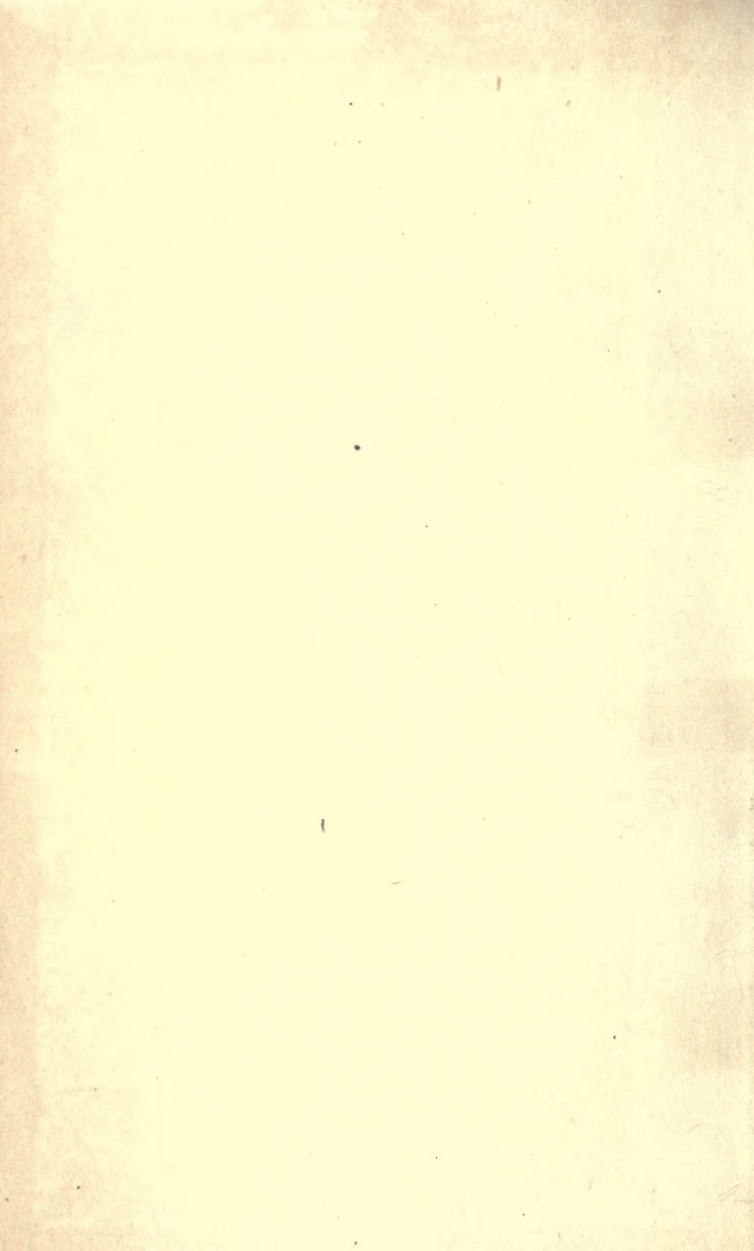
---

AN INTRODUCTION TO  
THE PSYCHOLOGY OF  
EDUCATION











Psych.  
D7751

THE MODERN EDUCATOR'S LIBRARY

*General Editor*—Prof. A. A. Cock.

---

AN INTRODUCTION  
TO THE  
PSYCHOLOGY OF  
EDUCATION

BY  
JAMES DREVER

M.A., B.Sc., D.Phil.

READER AND COMBE LECTURER IN PSYCHOLOGY IN THE UNIVERSITY OF EDINBURGH

AUTHOR OF "INSTINCT IN MAN," "THE PSYCHOLOGY OF  
EVERYDAY LIFE," ETC.

SECOND IMPRESSION

191126  
27.9.24

LONDON  
EDWARD ARNOLD & CO.

1923

*All rights reserved*

## THE MODERN EDUCATOR'S LIBRARY

General Editor : Professor A. A. Cock.

Crown 8vo. Uniform Cloth Binding.

### **Education : Its Data and First Principles.**

By T. P. NUNN, M.A., D.Sc., Professor of Education in the University of London.

**Moral and Religious Education.** By SOPHIE BRYANT, D.Sc., Litt.D., late Headmistress, North London Collegiate School for Girls.

**The Teaching of Modern Foreign Languages in School and University.** By H. G. ATKINS, M.A., D.Litt., Professor of German in King's College, University of London ; and H. L. HUTTON, M.A., Senior Modern Language Master at Merchant Taylors' School.

**The Child under Eight.** By E. R. MURRAY, Vice-Principal, Maria Grey Training College, Brondesbury ; and HENRIETTA BROWN SMITH, LL.A., Lecturer in Education, Goldsmiths' College, University of London.

**The Organisation and Curricula of Schools.** By W. G. SLEIGHT, M.A., D.Litt., L.C.C. Organizer of Training Classes and Adviser of Studies for Compulsory Day Continuation School Teachers.

**An Introduction to the Psychology of Education.** By JAMES DREVER, M.A., B.Sc., D.Phil., Reader and Combe Lecturer in Psychology in the University of Edinburgh.

---

EDWARD ARNOLD & CO., LONDON

## EDITOR'S PREFACE

THE *Modern Educator's Library* has been designed to give considered expositions of the best theory and practice in English education of to-day. It is planned to cover the principal problems of educational theory in general, of curriculum and organization, of some unexhausted aspects of the history of education, and of special branches of applied education.

The Editor and his colleagues have had in view the needs of young teachers and of those training to be teachers, but since the school and the schoolmaster are not the sole factors in the educative process, it is hoped that educators in general (and which of us is not in some sense or other an educator ?) as well as the professional schoolmaster, may find in the series some help in understanding precept and practice in education of to-day and to-morrow. For we have borne in mind not only what is but what ought to be. To exhibit the educator's work as a vocation requiring the best possible preparation is the spirit in which these volumes have been written.

No artificial uniformity has been sought or imposed, and while the Editor is responsible for the series in general, the responsibility for the opinions expressed in each volume rests solely with its author.

ALBERT A. COCK.

UNIVERSITY COLLEGE,  
SOUTHAMPTON.





## AUTHOR'S PREFACE

LIMITS of space have made it necessary to choose between a detailed treatment of only part of the field of the Psychology of Education and a general treatment by way of introduction to the whole subject. The latter alternative was adopted, in the main because it seemed to meet the most pressing need of the moment. There have been no less than three distinct and important thought developments within recent years, which have a direct and immediate bearing on the psychological aspects of education—those represented by Montessori, Freud and the American behaviourists respectively. All of these, so far at least as regards their main inroads into the educational field, are subsequent to the profoundly significant work of McDougall. Small wonder then that the psychology of education is in a chaotic state. If the present work succeeds in bringing some sort of order into the chaos, it will have fulfilled its main purpose.

In his Preface to *Instinct in Man*, the author stated that he had reserved the discussion of Freudian psychology for another occasion. The occasion is the present, but on account of space limitations the discussion is unfortunately much less detailed, and much more dogmatic perhaps, than it ought to be. There cannot be the least doubt that psychology and education owe a great deal to Freud and the psychoanalysts. In view, however, of the attitude of psychoanalysts towards what they contemptuously term “academic” psychology, there is no harm in pointing out that psychology did not begin with Freud, and that it is not a sufficient reply



to any criticism of Freud's teaching to say that the critic, not being a psychoanalyst, knows nothing about the matter. Frankly such an attitude is a very crude one. Possibly the comparatively undeveloped state of the science of psychology explains the kind of language used both by critics and by defenders of Freud, but one could hardly imagine the same sort of thing in physics or chemistry. What is of permanent scientific value in Freud's work will survive, and only that, and no making a religion of adhering to the letter of his teaching will alter the ultimate verdict of science.

The same kind of remark falls to be made with respect to the attitude taken up by some of the American behaviourists with regard to all psychologists who refuse to subscribe to the view that experimental and objective study of behaviour—mental testing and the like—is the only basis for a psychology of education. Again the immense services rendered to psychology by these workers in America is undeniable, but ——. Let rival schools of philosophy fling stones at one another as they choose. Workers in different fields of science can find a better use for their time and energy.

In two respects the present work marks some advance in the author's position from that represented in *Instinct in Man*. On the one hand, the attitude towards behaviourism has become somewhat more sympathetic, though without surrendering what appear to be the key positions. On the other hand, his views regarding the nature of suggestion have become more clearly defined. He is very sensible of the defects of the work, but the life of a teacher of psychology in a British university is at the moment a very busy one, and he might plead this fact as some excuse for the defects, unless they are too grave to be covered by such an excuse. He has at least attempted to work out a general point of view from which it is possible to see the different developments of a psychology of education in their mutual relations.

In conclusion, the author would place on record his sense of indebtedness to most of the leading psychologists of the day, and particularly to McDougall, Freud, Thorndike and Watson.

J. D.

UNIVERSITY OF EDINBURGH,

*August, 1922.*

# CONTENTS

CHAP.	PAGE
I. INTRODUCTION—PSYCHOLOGY AND EDUCATION . . .	1
II. FUNDAMENTAL FACTS AND FACTORS . . . . .	7
III. THE PSYCHOLOGICAL GROUNDWORK . . . . .	26
IV. THE GERM OF THE PERSON . . . . .	40
V. MENTAL DEVELOPMENT . . . . .	61
VI. THE RÔLE OF THE GENERAL TENDENCIES . . . . .	81
VII. THE DYNAMIC OF PERSONALITY . . . . .	108
VIII. CAPACITIES, GENERAL AND SPECIAL . . . . .	140
IX. MENTAL TRAINING AND DISCIPLINE . . . . .	164
X. SENSE, IMAGINATION, AND THOUGHT . . . . .	183
XI. THE SOCIAL GROUP . . . . .	208
INDEX . . . . .	223

## CHAPTER I

### INTRODUCTION—PSYCHOLOGY AND EDUCATION

WHAT is the relation of the science of psychology to the theory and practice of education ? The answer is by no means difficult. Though education has been, and may be, defined in many different ways, and from many different points of view, all the definitions would agree in recognizing it as a process in which, and by which, the knowledge, character, and behaviour of the young are shaped and moulded, in part by uncontrolled factors in the environment, so as to bring about adjustment to these factors, and in part by influences controlled by the adult community in such a way as to produce a certain type of individual, consciously or unconsciously regarded as the normal type by that community. Or, more briefly, since knowledge and character in another person can only manifest themselves to us in that person's behaviour, education is a process of controlling and modifying the behaviour of the young so as to produce a recognized type of behaviour in the adult. Now psychology according to the most recent views may be best defined as the science which takes as its field of study the behaviour of living organisms so far as it is mentally or psychically conditioned, and can be interpreted in mental or psychical terms. Hence it plainly follows that the theory of education must base itself very largely on the science of psychology.

This fact has been more or less clearly recognized almost since there was a theory of education. So much so, that it has sometimes appeared to the educationist that he could

deduce from the science of psychology his entire educational theory. But it by no means follows from the general relation between psychology and education that the whole theory of education is based on psychology, or in other words that the theory of education is simply applied psychology and nothing more. The relation between the two is not so simple and obvious as all that. There is another point of view equally fundamental, from which we are led to a very different conclusion. The theory of education must evidently consider the aims and ends with reference to which education, so far as it is a process under control, is carried on. Psychology cannot apparently help us to decide with respect to the value of aims and ends except so far as to tell us that the aims and ends proposed are psychologically possible or impossible. The fact would seem to be that we must in education have made up our minds what we would be at, what kind of result we wish to produce, before we can turn to the science of psychology for help. When we have decided on what is to be our aim, psychology may be expected to throw light on the best means to adopt for attaining it, but not till then. This is a very different verdict. It plainly means that until we have settled the essential and vital matters in education, psychology can yield us no assistance whatever.

Where does the truth lie between these two apparently very different conclusions? It is plain that psychology is concerned with matter of fact, not with the valuation of ends. So far as education is a real process involving the controlling and modifying of human behaviour, the relation between the theory of education and psychology, the science which seeks to understand and interpret animal behaviour, is perfectly clear. The process of education, simply as matter of fact, represents part of the field of study of psychology, and the psychology of education is the study of that particular process we call education, simply as matter of fact, not in any way the valuation of the ends sought or the results achieved by the



deliberate control exercised over the process. But this is not all. It must not be forgotten that any valuation of the results achieved is dependent upon our knowledge of what the results actually are. Nor must it be forgotten that we may set before ourselves ends which are psychologically impossible with the means to hand. So far even problems of value are not wholly independent of psychological investigation.

The first of these points is particularly worthy of the most careful attention. Our valuation of the results achieved we have said is dependent on our knowledge of what the results actually are. The statement may seem a mere truism. But to dismiss it as such with a mere shrug of the shoulders is a grave mistake. For, truism or not, it can easily be shown that its neglect in practice has led to innumerable failures and follies in the past, and is involving failures and follies of the gravest significance in the education of the present. What the results actually are may not be easily ascertained; the presumption indeed is all that way. Every phase in the process of education presents all the complexity that is inseparable from the life and behaviour of the most complexly organized of all living organisms, the human being. The concrete manifestation in the behaviour of the individual before us may appear to be one thing, and really be quite a different thing. Until we know the manifestation for what it is we do not know the fact, and cannot evaluate it with reference to any end whatsoever. Moreover, our knowledge of the fact is insufficient without some knowledge of its genesis, of how it came to eventuate. And, for educational purposes and valuation, we must not merely know the fact before us and its genesis, but also the after-history and final outcome of the condition or trait of the living being of which it is a manifestation. To use medical terminology, the educator must be able to observe the symptom accurately, to diagnose it, and to form the right prognosis.

The true relation of psychology to the theory and practice of education becomes clear at this point. Psychology is the science which studies these concrete manifestations in the behaviour of the human being, and which seeks to understand the conditions from which they arise. Hence the educator from the first step he takes in educating the child is dependent upon psychological knowledge. Further, though his aims and ideals are not as such derived from psychology, yet the practical application of these aims and ideals to the education of the child rests immediately upon a psychological basis. And finally the aims and ideals, quite apart from this practical realization, can only be interpreted in psychological terms, and have no meaning and no existence otherwise. In all these senses psychology is the very foundation of educational theory.

Of course it still remains true that psychology is not the whole of educational theory. For psychology there is neither good nor bad, neither worthy nor unworthy. All types of conduct, all aims, ideals, characters are simply facts to be investigated. In psychology alone there is no reason why we should strive to eradicate this characteristic, or to develop that, why we should aim at producing one type of character and conduct rather than another. In all these matters our reasons for taking the line of action we actually take derive ultimately from a philosophy of human life, not from psychology or any other of the positive sciences.

The theory of education thus presents two aspects. There is a philosophy of education, and a science of education. The main task of the philosophy of education is to examine and evaluate the ends with reference to which educational influences are brought to bear on the child. The task of the science of education is to describe and explain, as science explains—that is by tracing out the causal sequences, and formulating their laws—the process by which the behaviour of the child is controlled and modified, and his character

moulded. Psychology obviously underlies the science of education, and we have just shown that it is only by and through psychological knowledge that the results reached by the philosophy of education can come to have anything more than a merely academic significance. Hence, as between the two different estimates of the relation of psychology to education, and the importance of that relation, our final conclusion is much nearer the first than the second. We can settle hardly any essential and vital question in education, except in a merely academic way, and without reference to practical problems, independently of the science of psychology.

The author is aware that he is making a very wide and high claim on behalf of psychology—much wider and higher than the claim usually put forward. But the facts of the situation appear to justify the claim. In the preface to a recent book<sup>1</sup> the author stated the “psychologist’s creed” in the following terms: “For all those arts and sciences, which are concerned with the human factor in the world process in any of its phases, the science of psychology is as fundamental as is the science of physics for all those arts and sciences which are concerned with physical processes.” In no case is it so easy to justify this statement as in the case of education, as we have already tried to show. But all the other social sciences, so far as they can be applied practically to concrete reality, are similarly situated. All of them have an aspect which is primarily philosophy rather than psychology. But they remain purely academic precisely as long as this aspect remains philosophy. Even in ethics this truth is beginning to be realized. The newer ethics is largely a psychology of ethics. In political theory it has been realized for some time, though even yet psychology has scarcely been assigned its proper place.<sup>2</sup> In both these cases the philo-

<sup>1</sup> *The Psychology of Everyday Life*. London, 1921.

<sup>2</sup> For an admirable statement of the case for psychology with respect to political theory, and at the same time a survey of that field of psychology which is relevant to political theory, see McDougall: *The Group Mind*.

sophy aspect is of course in a sense fundamental. At the other extreme, where the importance of the philosophy aspect is relatively insignificant, as in medicine and industry, for example, the realization of the significance of psychology has come suddenly in our own time. Education is, as it were, midway between these two extremes with respect to the relative importance of the philosophy aspect. But for reasons which will appear as we proceed, if they are not already obvious, education is *par excellence* that field in which psychology is peculiarly fitted to make good its claim as stated.

#### REFERENCES FOR FURTHER READING

The questions discussed in this chapter are discussed in most general introductions to the Theory of Education. The following works should, however, be consulted:

1. MÜNSTERBERG: *Psychology and Life*. Constable.
2. MÜNSTERBERG: *Psychology and the Teacher*. Appleton.
3. DEWEY: *Educational Essays*. Edited by Findlay. Blackie.
4. NUNN: *Education, Its Data and First Principles*. Arnold.
5. DARROCH: *Psychology in the Training of the Teacher*. Longmans.



## CHAPTER II

### FUNDAMENTAL FACTS AND FACTORS

BEFORE beginning the specific discussion of the psychology of education, it is necessary to direct our attention to certain basal facts and principles, by which our standpoint and treatment must be determined throughout. It might be maintained that these facts and principles furnish the groundwork of psychology itself. It is certain that they are of quite special significance with reference to a psychology of education. So much so that, while it is possible to conceive of a treatment of pure psychology, in which little or no stress is laid on them, it is quite impossible to imagine a psychology of education on such lines. That is to say, the pure psychologist, albeit by a somewhat narrow and restricted interpretation of his field, might have little or nothing to say of these facts and principles, but the educational psychologist cannot interpret his field in any way that will allow him to leave them out of account, or even materially to lessen their significance.

### THE LIVING ORGANISM

The human being is a living organism. That is the first fundamental fact to be kept in view throughout our discussion. It is indeed a profoundly significant fact for all those arts and sciences which concern themselves with the human being. What are the distinctive characteristics of a living organism? We may define a living organism as a self-maintaining system



of activities and forces, which is self-determining both in respect of its own development and in respect of its reactions to the external environment.

Some explanation and elucidation of such a definition is necessary. From the ordinary point of view an organism is a material thing, possessed of a more or less complex structure, and consisting therefore of some few or many distinct parts or organs. Each part or organ has its own distinct function to perform, and so long as the organism lives each organ performs that function. All this is true but unessential. The first essential fact about the living organism is that it is a centre of activity or force, not that it is a complexly organized material structure. The concepts of activity and force are at the present time *taboo* in physical science. Physical science knows only happenings and laws according to which the happenings take place. Activities and forces it has discarded as remnants of the primitive anthropomorphic view of nature. Some psychologists have argued that psychology also as a science must follow suit. But that is quite impossible. Psychology, and with it all the biological sciences, cannot help knowing real forces and activities. To ignore their existence is entirely unjustifiable, and would involve a "hylomorphic" view of the living organism as unscientific as the anthropomorphic view of physical nature. For the biological sciences the organism is primarily a system of forces or activities, not a complex structure.

As a system of forces or activities the living organism is self-maintaining. This is the second essential fact. A recent school of biology and biological psychology<sup>1</sup> sets out from the conception of a stationary physiological state, which the organism strives to maintain, or regain if it is disturbed. The designation "stationary physiological state"

<sup>1</sup> The school represented by Semon, Rignano, and others. For a discussion of the "stationary physiological state," see Rignano's *Essays in Scientific Synthesis*.

is perhaps unfortunate, for in life there is no stationary state. But the fact so designated is nevertheless an obvious one. There is a condition of equilibrium to which the organism constantly tends to return. This equilibrium is not a mechanical, static equilibrium, but a vital, dynamic one. Every threatened or actual disturbance of the equilibrium evokes forces and activities which tend to maintain or to restore it.

Lastly, the living organism is determined from within, even in its reactions towards external conditions. This is the third essential fact. At the very outset of our study of the psychology of education we are thus brought up against a principle which we shall require to keep in view throughout—the principle of self-determination. “One man can lead a horse to the water, but a thousand men cannot make him drink,” is a popular saying which expresses the principle in a familiar way. The reactions of a living organism cannot be rightly regarded as the effects on the organism of external objects, but rather as the responses of the organism to external objects. This obviously implies that they are determined from within, rather than from without.

This last principle is so important, and will so often be invoked in what follows, that we may not leave it without being perfectly clear as to what it implies. It is easy to see that the normal growth and development of an organism is determined from within, takes place, that is, in accordance with the laws of its own nature. The acorn does not grow into a fir-tree, nor is an eagle hatched from a turkey's egg. No matter what influences may be exerted from without, the tree that grows from an acorn is an oak, and the bird that comes from a turkey's egg is a turkey. So far it is clear and unmistakable that a living organism is determined by the laws of its own inner nature. But it is by no means equally clear as regards its reactions to external things. How far is the principle of self-determination valid as regards, let us say,

the behaviour of a living organism with respect to some object in its environment by which it is disagreeably affected ? On the long view the principle is also valid in such a case, though perhaps not so obviously as in the case of normal growth and development. The reaction of an organism to a stimulus is never the effect of the stimulus. On the contrary, so far as the reaction is the response of the organism, the stimulus is not its cause, but merely its occasion. The nature of the organism then and there determines the response of the organism. It is true that to a different stimulus the response might be different. It might also be different to the same stimulus at another time. The difference in either case would be the expression of a difference in the organism responding. But, on the other hand, this does not mean that the behaviour of an organism is arbitrary and lawless. As a scientist, the psychologist must assume absolute determination for each and every reaction. Otherwise a science of psychology were a mirage. The determination, however, which the psychologist postulates, must be rightly understood. It is not the mechanical determination of the physical, determination from without, but the teleological determination of the living, determination from within, self-determination. What may be the ultimate meaning of life and self-determination is a problem for speculative philosophy. The psychologist simply starts with the fact.

### BEHAVIOURISM

Viewing the human being as a living organism, the psychologist may evidently go on to study his facts, maintaining the biological point of view throughout. This has come to be characteristically the procedure of the present-day educational psychologist. It is not to be doubted that it is justified by its results in educational theory and practice. Nevertheless it is a procedure that cannot be adopted without

safeguards. The psychology to which it leads is the type of psychology known as "behaviourism." And behaviourism is capable of an extreme development, in which it ceases to be psychology. Again, therefore, it is necessary for us to make our pathway clear, before we go forward.

As we have already seen, psychology may be defined as the science which studies the behaviour of living organisms. Some psychologists define it in this way without any limitations or qualifications. But to make the definition acceptable, certain limitations and qualifications are essential. Its method of interpretation is as characteristic of psychology as its field of study. This interpretation is in psychical or mental terms. In order to define psychology in a complete and satisfactory way, we must define it as the science which seeks to interpret in psychical or mental terms the behaviour of living organisms, so far as that is psychically conditioned. Without some such qualification our study of animal behaviour may be systematically developed as a science, but the science is not psychology. It is either physiology or a new branch of biological science.

The complete answer to the claims of an extreme behaviourism of such a kind, which professes to be a psychology, is that for the human being the most fundamental fact in the universe is experience or consciousness. Traditionally the science which took cognizance of this particular fact was the science of psychology, and this fact was taken as the basis of that science. Each individual is in a position to observe directly in himself the various changing phases of experience. The earliest science of psychology was founded upon such self-observation or introspection; the wider psychology of to-day, so far from repudiating its origin, can only develop as a psychology by utilizing to the full the results obtainable by self-observation in the interpretation of all the different orders of facts now included within its boundaries. Behaviourism, however, does not require to



be abandoned, but only that extreme form of behaviourism which involves a denial of all validity and even of real existence to psychology. It is true that the point of view of science is the point of view of an external impartial observer. But from the point of view of an external observer who was capable of observing the whole fact, experience or consciousness would itself appear as a phase of the behaviour of the living organism, that is, of its reaction or response to environing conditions.

The alternative to behaviourism is the point of view of the older psychology, the point of view, that is, from which the science was regarded as simply the science which studied mental process or mind. This psychology was a branch of metaphysics. The older point of view has been abandoned primarily because the motives for studying mind have changed. The original motive was the desire to understand the nature of the mind with a view to throwing light upon the nature and destiny of the human soul. It is now everywhere realized that the study of mental process has a very important practical bearing, in that it enables us to understand behaviour, in particular our own behaviour or the behaviour of other human beings, and this understanding of behaviour, as we have already tried to show, is of the most far-reaching significance. To study mental process with the object of understanding behaviour necessarily involves the substitution of a behaviourist psychology for a metaphysical.

A behaviourism which includes consciousness or experience as a phase of behaviour would seem to be not only the most useful kind of psychology from the standpoint of the educator, but likewise the normal psychology from the standpoint of the logic of science itself. From the standpoint of the educator there cannot be the slightest doubt about the matter. The main reason why the older psychology was so barren as far as the teacher was concerned was because the point of view was radically wrong—that is, for the purposes



of the teacher. It is undoubtedly a tremendously important thing for the human being to understand mind, and to get light on the nature and destiny of the human soul. The quest for such understanding and such light is a very legitimate quest. But for the teacher as such the more immediate problem is the understanding of behaviour, since he is aiming at the modification of behaviour. In his immediate task the understanding of behaviour is the primary consideration; the understanding of mind in the abstract may be supremely important for the human being, as a human being, but it is a secondary consideration for the human being as a teacher.

### THE PSYCHO-PHYSICAL PROBLEM

One interesting result of the adoption of a behaviourist point of view in psychology is that we are by such a step enabled to escape the necessity of offering a solution of a problem which has vexed psychology since the time of Aristotle, viz. the problem of the relation of mind and body, or of mental process and physical process—the so-called psycho-physical problem. Although the problem is not a problem for the behaviourist at all, as we shall see presently, it may be worth while to indicate how and where the problem emerges. In order to do so as briefly and as clearly as possible, let us consider a simple piece of concrete experience and the associated behaviour. Sitting by the fireside on a Friday evening, with the delightful feeling of being free to read what I like, I cast my eyes on the bookshelves. There is *Don Quixote*, and there beside it is Mark Twain's *Tramp Abroad*. I recollect a very amusing episode in the latter book, which determines my choice in its favour. I get up from my seat, walk to the bookcase, take down the book, and begin to read. Here we have a physical and physiological series of happenings, a, b, c, d, e, etc.—stimulations from the fire, the light, the books, and excitation of

the sense organs, conduction processes in afferent nerve fibres, nervous processes in the cerebral cortex, conduction processes in efferent fibres, excitation of end organs in muscles, contraction of muscles, and as a result movement of the whole body and parts of the body in space. We have also a mental or psychical series of happenings, A, B, C, D, E, etc. —percepts of fire, light, books, memory images from the last reading of Mark Twain, decision to read this, and not that. Now what is the relation between these two series of happenings? This is the psycho-physical problem.

The straightforward, naïve solution of the problem is that known as the interactionist solution. According to this solution the two series of happenings are related in such a way that the physical series gives rise at a certain point to the psychical series, and at another point the psychical series gives rise to a physical series again, and there is complete continuity of causal connection throughout. Physiological process acts on mind; mental process acts on body.

The first difficulty that this solution encounters is that there is possibly no gap in the physical or physiological series of happenings to be occupied by the psychical series, that the psychical series is throughout accompanied by physiological processes in the cerebral cortex. No psychosis without neurosis. But this apparently involves continuity of causal sequence on the physical side. This leaves the psychical series, so to speak, in the air. If the causal series is complete without the psychical, then the latter can have no causal relations with the physical either at the one end or at the other. It is neither caused by the physical, nor does it cause the physical. A halfway house, known as epiphenomenalism, was at one time occupied by many scientists approaching the problem from the physiological side, but it has few occupants at the present time. According to the opinion of these scientists, physical processes may give rise to psychical states, but there is no reciprocity; psychical

states have no causal efficiency. Psychical states are a mere epiphenomenon, a mere froth, so to speak, the presence or absence of which makes no difference to the final outcome. The difficulties of this view are such that it has practically no adherents nowadays. The second difficulty encountered by the interactionist solution is the difficulty of conceiving causal continuity between the physical and the psychical. The two kinds of process appear to have nothing in common whatsoever, and how can there be a causal connection where there is no common factor? A third difficulty, related to this, and no less formidable, is the difficulty of reconciling the causation of the psychical by the physical, or the physical by the psychical, with the principle of the conservation of energy. It is a fundamental principle of all physical science that the amount of energy in the physical universe remains constant, that every energy change is a transformation of energy into another form, potential or kinetic. But if a physical process causes a psychical change, does this not involve the disappearance of energy from the physical system? And similarly, if a psychical process—say a purpose—causes physical change, it cannot do so without energy being employed in the physical system, energy which comes from outside that system.

The seriousness of this last difficulty for the scientist stands out in sharp relief when we remember that not only do physicist and physiologist assume that the principle of conservation of energy holds at all times in the physical system, but at whatever point they test the assumption they find it verified within the limits of experimental error. It has been argued that the principle of conservation of energy only applies within a purely material system, and that it does not apply, and is not intended to apply, where an immaterial factor is in question. But such an argument has only an abstract and theoretical value and significance. In the actual case of living organisms, the physiologist,

studying the various transformations of energy by the most delicate methods at his disposal, has found that the principle of conservation of energy holds. Stout quotes from McDougall: "The energy value of the output of the human body in the form of work, chemical products, and so forth, equals almost exactly the energy value of food and oxygen absorbed—that is the value of the sum total of energy supplied to the body."<sup>1</sup> The study of energy transformations in animals, where more radical methods of investigation can be employed, yields striking confirmation. Against such a fact the theoretical argument can carry little weight. The physiologist demands continuity of material process, and, as far as energy transformations are concerned, he apparently finds it.

What is known as the hypothesis of psycho-physical parallelism has been evolved to meet these difficulties. Parallelism may be regarded either as a theory offering an explanation of the facts, or as a mere working hypothesis. As a working hypothesis its *locus standi* is very doubtful, for there seems no sphere in which it works. It corresponds to no real, but only a highly artificial need, for a working hypothesis. As a theory offering an explanation of the facts, it is more important, and may interest both the biologist and the metaphysician. As developed with a biological bias, the theory takes the form of the double-aspect theory professed by Lloyd Morgan and others among modern psychologists. According to this theory, physical and psychical are two aspects of one and the same fact. Physiologist and psychologist may each isolate one aspect of the process for the ends of their special sciences, but in both cases we are dealing with an abstraction from the concrete fact as we find it in the world order. On such a view the principle of the conservation of energy does not come into question at all, because it is a principle of the physical only.

<sup>1</sup> *Manual of Psychology*, 3rd ed., p. 93.



But there are other difficulties which this theory must encounter. If we consider a process which is both physical and chemical, as all chemical process is, has the process any physical correlate, in so far as it is chemical? When we go to the root of the matter, can we legitimately take the physical and the chemical to be really two aspects of the same process, or are they two processes going on simultaneously? And is not the position analogous as regards the psychical process and its physiological correlate? It seems therefore that we are no farther forward.

Taking parallelism at its face value, we find that its difficulties are by no means diminished. If we assume that every psychical fact has its physical correlate, it is an easy matter to adduce psychical facts, the nature of whose physical correlate it is extremely difficult to imagine. Take purpose, or the unity of the personal life, or interest, or æsthetic valuation. Further, unless we supplement the statement "no psychosis without neurosis," by the further statement, "no neurosis without psychosis," we encounter the anomaly that processes in the nervous system, which are absolutely similar, as far as our knowledge goes, must yet be fundamentally different, in that the one is correlated with a psychical process, the other not. Finally, on purely scientific grounds, does the adoption of psycho-physical parallelism afford an avenue of escape from epiphenomenalism? If the circle of causation is complete on the physical side, then the psychical process makes no difference in the actual outcome, as far as the physical world order is concerned. Lotze pointed out long ago that the difficulty of conceiving the causal efficiency of the psychical relatively to the physical, or the physical relatively to the psychical, is not peculiar to this particular case. Physical change itself involves the same difficulty. Bodies attract one another in virtue of gravitation, but how gravitation operates is a mystery. We know the fact, but the ultimate how or why of the fact is quite



another matter. We do not know how anything ever acts on anything else.

In view of the tangle of controversy to which it leads, it is not a little comforting to realize that the psycho-physical problem is a very minor problem, as far as the psychology of education is concerned, however important it may be for our ultimate theory regarding the nature of the universe. The living organism is mind and body, or "body-mind." The behaviour of the living organism is a complex of physical and psychical process. What either is in its ultimate nature, and what is the essential and ultimate relation between the two, the educational psychologist need not stop to inquire. For him the basal facts are that in his own experience his thoughts, feelings, desires, and purposes exercise a determining influence on his external behaviour, and physical processes in the external world, as well as physiological processes in his own body, exercise a determining influence on his thoughts, feelings, desires, and purposes. That is to say, psychical process determines physical, and *vice versa*. His interpretation of the behaviour of others is necessarily on this basis, and action on such interpretation constantly meets with results which confirm it. If anyone asserts that the hypothesis upon which it is based is untenable, that human purpose, for example, cannot in any way affect physical process, and that any apparent contradiction of this principle is an illusion, surely the *onus probandi* lies on such a one. In the meantime, at all events, the educational psychologist may safely act on his naïve assumption, for the proof that it is untenable is not in sight.

It is very doubtful whether the psycho-physical problem is even important in pure psychology. If the main aim of pure psychology is to understand the nature of the mind, and in particular the nature and destiny of the human soul, then indeed the psycho-physical problem might be regarded as a fundamental problem in psychology. But this is by

no means the aim of the psychology of the present day. As we have seen, its aim is to understand the behaviour of living organisms, and of the human being as a living organism. That is to say, its aim is identical with the aim of the psychology of education, and its attitude towards the psychophysical problem ought not to be essentially different.

### THE CONSCIOUS AND THE UNCONSCIOUS

We have seen that the interpretation of animal behaviour in terms of its psychical components is the aim of modern psychology. Some consideration of the character and varieties of the psychical cannot be longer deferred. Anything like a detailed consideration of the character of the psychical, however, would lead us away from psychology and deep into philosophy. Even to define the psychical in an approximately satisfactory way for scientific purposes is impossible, for the psychical is an ultimate category. It may, nevertheless, be possible to make clear its character, as distinct from the physical, without definition. The world of physical process consists of motion and that which is moved—the material. The physicist finds it possible to reduce all the varieties of physical process, with some fair degree of satisfactoriness, to space, matter, and time, and to represent them all by means of the C.G.S. system of units. But the psychical does not present itself in forms which are reducible to these physical ultimates. In its more familiar shapes, as ideas, feelings, desires, emotions, and the like, it is obvious that the centimetre and the gramme are quite inapplicable to it. We assume the same to be true of its less familiar shapes, of which more presently. Hence we can say that the psychical is immaterial, and non-spatial, but not however that it is non-temporal, for psychical happenings, like physical, take place in time.

But the characteristic which above all marks off the

psychical from the physical is positive, not negative. That characteristic is its relation to what we call consciousness. Consciousness is another word that defies definition. Even to describe it is not easy. We have a peculiar inside knowledge of certain conscious processes, which is direct and immediate, but not direct and immediate in the same sense as our knowledge of the external objects of sense perception. This unique relation to conscious process in ourselves is one source of the difficulty experienced in describing it satisfactorily for the purposes of psychology. There is in consequence a tendency to restrict the term consciousness to those processes alone which are constituent parts of our conscious personal life. Thus consciousness has been described as "awareness." So to describe it is not only not helpful, but may be positively misleading. For "awareness" is either simply a synonym for "consciousness," or it designates a special and relatively high type of consciousness. It is true that what I am aware of I am conscious of, and what I am conscious of I am aware of. But may there not be a consciousness of which no "I" is conscious, and for which "awareness" is no appropriate designation? Stout quotes with approval from Ladd: "What we are when we are awake, as contrasted with what we are when we sink into a profound and perfectly dreamless sleep . . . that it is to be conscious." And he adds: "The very dimmest and vaguest feeling, accompanying the last stage of sinking into dreamless sleep, or the first stage of gradual awakening, is already consciousness. . . . If, as some suppose, the dreamless sleep is accompanied by some dim feeling, this dim feeling is dim consciousness."<sup>1</sup> It may be said at once that the sleep illustration is not satisfactory. Even in the most profound sleep, or in the deeper hypnotic states, we can by appropriate measures obtain such evidence of conscious process, as we rely on to indicate conscious

<sup>1</sup> Stout: *Manual of Psychology*, 3rd ed., p. 11.

process in another person, or in one of the lower animals, at any time. Stout's addendum to Ladd's statement seems to be made with such facts in view. But it is not sufficient. So long as we persist in describing consciousness from the inner view-point of the person who is conscious, and so as to include only such consciousness as is accessible in this way, we cannot possibly fit conscious process into the new, wider psychology of the present. We must somehow get the view-point of the hypothetical external observer, who is capable of observing all the facts.

The psychologist is constantly coming across facts, in normal as well as abnormal mental life, which point in the direction of conscious process below the level of personal awareness. Even from the introspective standpoint, it is incumbent on him to attach a sufficiently wide meaning to the word "conscious" to include a wider field than the field of awareness in the ordinary sense of that term. Still more is this the case from the standpoint of behaviourist psychology. Is it possible, then, to describe conscious process in terms which do not involve the inside, individual, personal view-point? The problem is to describe what we know from the inside, as if it were observed from the outside by an observer capable of observing it. The problem is insoluble except in the most general terms. If such a description must be given, however, conscious process must be described as a unique kind of synthesis or integration—psychical integration—in which the life process of an organism and physical processes resulting from environing conditions are combined or integrated into a product that is neither physical nor physiological, but psychical, and therefore immaterial, non-spatial, and "aware" when observed, if such observation is possible, from an inside view-point. It cannot be pretended that this description is adequate, but it at any rate emphasizes the two points which appear to be important: (1) that conscious process is of the order



of existence which each individual knows from the inside in his own experience, and (2) that in its essential nature it is a synthesis involving two main factors, the life process and physical process. It might be asked, how can we know that this synthesis or integration takes place, if there is no personal awareness. The difficulty is partly imaginary. We infer conscious process in the case of the lower animals without any personal awareness, from phenomena which are inexplicable without something which is at least of the same order as the conscious process we know in ourselves. The same kind of evidence will bear the same construction in the case of ourselves even where conscious process never enters our personal awareness.

Conscious process is the primary mode in which the psychical is manifested. The older psychologists recognized no other modes. But modern psychology has realized that the conception of the psychical must be widened so as to include processes and phenomena other than conscious process. These phenomena are grouped together under the designation "the unconscious." Unfortunately the psychology of the unconscious has of late years been pursued with much assiduity, but with little scientific caution or logical precision, and the result has in many cases been a psychology verging on the mythological. The whole field demands at the present time the most careful scrutiny, the utmost clarity of definition, and the most painstaking and rigidly controlled investigation. Such work cannot be attempted in a psychology of education. But, owing to the fact that it will be necessary for us later to describe phenomena and appeal to laws of the unconscious, we cannot go on without some attempt to bring what order is possible into the great mass of material available in the various treatments of the unconscious.

If the term "unconscious" is to be employed in a specific and technical sense in psychology, it ought to be employed to designate those psychical determinants of experience or



conscious process, which from their nature can never become conscious. We should then recognize the two types of mental fact, conscious process, and unconscious determinants of conscious process, or the conscious and the unconscious. It is certain that nothing but confusion can follow the application of the term "unconscious" to processes which are of the same order as conscious process, but do not enter personal consciousness. The characteristic of conscious process is psychical synthesis or integration, not presence in personal consciousness.

But if the term "unconscious" is employed in this way, what would it include? It would cover two types of fact. The first type would be structural. Perhaps the best example we can select to make clear the nature of this type is the sentiment. The sentiment is not an experience or conscious process, but a determinant of conscious process and of the external behaviour which results. When a sentiment is part of the mental structure functioning by way of conscious process, what is experienced is a feeling or emotion relative to a certain object, and an impulse to act in a certain way. The feeling and impulse may vary according to circumstances, while the sentiment as such remains relatively unchanged. We may be clearly conscious that we possess a certain sentiment, as we are conscious that we possess a pancreas or adrenal glands, but the sentiment itself is never in consciousness; though determining consciousness, it is itself unconscious. So too of memories which are not recollections. Our present experience and behaviour may be modified by them without their revival, without their becoming conscious. So too of customs, habits, prejudices, and the like. The most fundamental and primitive of such structural determinants of experience and external behaviour are the instincts. From a certain point of view we might even identify the instincts with this structural unconscious, and regard all the other mental structures—sentiments, habits,

prejudices, customs—as modifications of these primary mental structures with which the human being starts in life, that is, of the original unconscious.

It might be objected that we are assuming that these structures are psychical, when as a matter of fact they may be merely physiological. In a sense this is true, but the matter is one which cannot be argued here. Whether psychical or physiological, they are determinants of psychical process, and it is certain that the psychologist can give a fuller and more adequate account of them than the physiologist. Such being the case, the psychologist is entitled in the meantime at least to discuss these determinants as psychical, and to regard them in the light of mental structures.

Now these mental structures constituting the unconscious are living structures, or at least are constituent parts of a living organism. As such they cannot be conceived as inactive or inert, but must be conceived as partaking in the life activity at all times. So far as they are active in relation to environmental conditions, they are, as we have seen, determinants of conscious process. But they may be determinants of process which is “endopsychic.” That is, they may be active relatively to one another, and the processes involved may never take on the form of psychical integration at all. The phenomena of the Freudian “censorship,” and other phenomena which we shall discuss later, may be cited in illustration of the processes referred to. For the present it is sufficient to bear in mind that the mere existence of a strong sentiment can determine the inhibition, or the greatly modified activity, even of natural tendencies, by exercising a force or “tension”—if we may so designate it—which cannot for a moment be confused with the psychical integration that is consciousness. Such activity of the various mental elements in the unconscious relatively to one another we shall throughout speak of as “endopsychic process.”

Let us sum up what would appear to be the situation. Psychology has three distinct sets of facts to investigate in the attempt to interpret behaviour in psychical terms. In the first place there are the structural mental elements, or the unconscious. In the second place there are the processes involved in the interaction of these structural elements with one another, or the endopsychic processes. In the third place there is the psychical synthesis or integration, which we call experience or conscious process. It was a radical error of the older psychology that it recognized but the one type of psychical fact, the type accessible to introspection, viz. conscious process. It is the great merit of present-day psychologists, like Stout, Shand, and McDougall, that they have emphasized the existence and importance of the disposition, as a second type of mental fact. It will probably be one of the chief claims to remembrance in the history of psychology of Freud, Jung, and their followers, that they have called attention to the third type, the endopsychic process.

#### REFERENCES FOR FURTHER READING

1. JAMES : *Principles of Psychology*. Macmillan.
2. STOUT : *Manual of Psychology*. Clive.
3. SEMON : *The Mneme*. Allen and Unwin.
4. RIGNANO : *Essays in Scientific Synthesis*. Allen and Unwin.
5. LLOYD MORGAN : *Instinct and Experience*. Methuen.
6. MARSHALL : *Mind and Conduct*. Williams and Norgate.
7. MÜNSTERBERG (Edited by) : *Subconscious Phenomena*. Rebman.
8. MORTON PRINCE : *The Unconscious*. Macmillan.
9. JUNG : *Psychology of the Unconscious*. Kegan Paul.

## CHAPTER III

### THE PSYCHOLOGICAL GROUNDWORK

THE previous chapter was devoted to the consideration of some of the fundamental problems with which psychology is faced at the outset. The present chapter must also be preliminary to the psychology of education in the strict sense. For it is still necessary to consider certain basal facts of general psychology, which must be assumed in the discussion that follows. It is much better that these should be considered here, even at the risk of adding another somewhat stiff chapter to the last, rather than that they should involve digressions from the main course of the argument later.

#### CONSERVATION, SELECTION, AND COHESION

Psychical process—both conscious process and endopsychic process—is life process in a living organism. It is characteristic of all such process that it leaves behind it a permanent product in the shape of a modification of structure in the organism itself. Every living organism has a history, and that history is recorded in the organism with the fullest accuracy and detail. Inorganic substances also have a history, but not in the same peculiar sense. The history of inorganic substances is the impressed record of what has happened to them ; the history of living organisms is the form of the life activities developing in them. This is more than a merely verbal, theoretical, or formal distinction. A living organism at any particular moment is its whole previous



history ; an inorganic substance is in the main what it always was, the various traces resulting from what has happened to it in the past being more or less superficial.

This characteristic of life process is greatly accentuated in the realm of the psychical, so that, although the principle holds of the vital physiological processes in the body, as well as of psychical processes, on the surface it seems as if the difference between the mind and the living body, in respect of the extent to which they respectively show modification due to past history, is quite as great as the difference between the living body and inorganic matter. "We are a part of all that we have met," is true of the physiological, though it may be only obvious to the most careful scrutiny ; it is far more emphatically true of the psychical, and he who runs may read.

Conservation is, then, in a paramount degree characteristic of the psychical. What is involved in conservation ? It involves first of all that retention of past experience, which underlies what we call remembering. What we see, hear, or read, leaves behind some kind of psychical—and neural—modification, in virtue and by means of which we can, as we say, *recall* the experience of the past, often in the minutest detail. But it is not the experience itself as a conscious process, that is retained or conserved, and the remembering is not a repetition of the same conscious process. The psychologists of the past have a good deal to answer for in the way of looseness of expression, and this is one case where such looseness has been almost fatal to a clear understanding of the facts. Percepts and ideas have been spoken of as permanent, self-subsistent entities, which still existed even when no one was perceiving or thinking them, and not merely as entities, but even as agents, which had a real and responsible part to play in the sphere of the psychical, on and off the stage of consciousness. In actual fact percepts and ideas are simply processes, and have no other existence, and no other

possibility of existence. It is, therefore, entirely meaningless to speak of them as though they existed for themselves, after the processes, which they are, have run their course, and equally meaningless to speak of them as coming back into consciousness when we remember. A percept is an event; the memory of it is a new event. What is retained or conserved is the product of the conscious process in the shape of a permanent modification of the living organism; it is disposition, not experience.

What we remember, however, represents but a small part of what is conserved. Since we remember more than we can recall at will, it is evident that what we can recall at will bears a still smaller proportion to the structural modifications in the psychical, which stand for our past history. Much that we experience is, as we say, forgotten; it is gone beyond voluntary control. But even in such cases, under certain conditions what we had thought entirely forgotten may come back to mind. The evidence is not conclusive, but there are strong grounds for maintaining that anything we have once experienced may be experienced again by recall. This holds not merely of those things of which we have been personally conscious at some time in the past, but even of things of which we have never been personally conscious. Of course when we were never personally aware of such things, we cannot be said to remember them. Nevertheless it is certain that they determined conscious process in the past, and that their traces are conserved.

But conservation also involves processes which were never conscious processes. Perhaps the best illustration of such conservation is obtained from the acquiring of a piece of skill. The same holds of the endopsychic processes. Stout has stated what he calls the "psychological law of retentiveness" in the following terms: "When and so far as mental development takes place through mental conditions, it does so because specific experiences leave behind them specific traces

or dispositions, which determine the nature and course of subsequent process, so that when they are modified it is modified.”<sup>1</sup> Except for the fact that it speaks only of experience, this law might be taken as summing up adequately the psychological situation. All psychical process whatsoever, conscious and endopsychic alike, leaves traces, “which determine the nature and course of subsequent process,” and all development, so far as that depends upon psychical conditions, involves the conservation of these traces. The fact is evidently a fundamental one for education.

Another characteristic of the psychical, as universal and as important as conservation, is selection. If conservation is the basis of all mental development, selection is the key to the direction it takes, and at the same time the main condition upon which all the higher mental processes in the human being depend. In human psychology we discuss the phenomena of selection under the designation of “attention,” but just as conservation is far wider than the retention involved in remembering, so is selection in the psychical life far wider than attention. Equally with conservation it is a permanent and universal characteristic of all life process.

Life in all its phases and stages is everywhere selective. The living organism reacts to this rather than that object in its environment, and in each case selects one out of the several modes of behaviour which to the external observer appear equally possible. We have already pointed out that the behaviour is not arbitrary, though it may appear so. The selection is determined, but it is determined from within ; that is why we can speak of selection. The affinity of certain chemical substances for certain other chemical substances does not determine real selection, but only what is selection or preference from a figurative and anthropomorphic point of view ; vital process in the living organism is selective in a real sense. So also with what we call “natural selection.” So

<sup>1</sup> *Manual*, p. 169.

far as that involves the action of an environment on living organisms, it is not properly termed "selection" at all. So far, however, as it involves the action of the organism towards the environment, the term "selection" is appropriate, but the designation "natural" loses its appropriateness. Darwin was quite conscious of the questionable propriety of the term, and of the analogy to the elective affinity between chemical substances.<sup>1</sup>

In the psychical sphere attention is probably the most important of the forms which selection takes. We shall have occasion later to deal at length with the mechanism of attention, the conditions upon which it depends, and its results.<sup>2</sup> In the meantime the only points which require to be kept in mind are : (1) that attention in some degree is necessarily involved in conscious process, and (2) that upon the direction of attention at any moment depends the mental development which is taking place at that moment. As far as normal mental life is concerned, there is no such condition as absolute inattention. What the teacher calls inattention in a child at school is of course merely attention to something other than that to which the teacher thinks the child ought to be attending. Such inattention is not always so serious an obstacle to the child's development as we are apt to think, however serious an obstacle it may be to the child's development along the precise lines laid down by the teacher. In any case distractibility in a child, readiness for the attention to wander aimlessly from one thing to another, without prolonged pursuit of any one theme, is a far more serious state than occasional inattention to the work in hand because of absorbing interest in something else. As in most of the other practical problems of education, it is essential that we know the fact and its genesis, before we proceed to deal with it. The futility—and worse—of indiscriminating treatment

<sup>1</sup> See *Origin of Species*, Chap. IV.

<sup>2</sup> Not specifically discussed in present volume.



of cases of inattention, according to some general formula or other, is obvious.

A third characteristic of the psychical, scarcely less important than conservation and selection, is *cohesion*. The ordinary psychological term is *association*. But, though "association" might be used in a sense sufficiently wide to include all the facts, its ordinary usage is somewhat restricted nowadays, and the older usage of the English associationists suggests a psychological theory which few psychologists of the present day would accept. Hence it seems better to use a term like "cohesion," which is free from all such suggestions. In cohesion we are faced with what is probably the most fundamental and pervasive of the endopsychic processes. Because of cohesion the "conserved unconscious" is not a mere mass or aggregate, but an organized whole, here and there, it may be, very highly organized. The facts are so familiar, that they hardly require to be dwelt upon, but for the necessity of assuming them later. Psychical processes leave behind them traces which are conserved; but they are not conserved as isolated items. As we have already seen, the traces are really modifications of structure in a living organism. That in itself will secure that these modifications should be bound up and interwoven with one another. The unity of organic life in the individual organism necessarily involves some sort and measure of cohesion with respect to the various products of psychical process. Further, each structural element has its own unity of process, which will also involve cohesion in regard to individual modifications of that particular structural element. Over and above such cohesion, there would seem to be also a cohesion resulting from the course of vital process itself, so that the mere fact that one structural element functions, and suffers modification, in immediate succession to another, is sufficient to cause a bond of connection between the two structural elements, or particular modifications, because of which the second will again tend

to function, after the first has functioned on a subsequent occasion.

This seems a very abstruse way of describing familiar facts, but it is necessary that we should at present see the facts in relation to the life process as a whole. Consider the facts themselves for a moment. When we have experienced a situation presenting different aspects and phases, the subsequent remembering of one of these aspects or phases tends to recall to memory the others also. The sight of a flower by the wayside may recall the experience of a complex situation, in which the flower was a very minor aspect. In fact explicit remembering is not necessary to demonstrate this type of cohesion. The admirable illustration of the stoned puppy, quoted by Professor T. Percy Nunn in a previous book in the present series,<sup>1</sup> demonstrates it in the most striking fashion. Again, when a certain topic is under discussion, facts relevant to that topic come to mind, though as experiences they may belong to very different periods in our personal history. Finally we can almost at will reproduce in memory the order in which a series of experiences succeeded one another, and, independently of voluntary effort, provided other conditions are not operating too powerfully, the memory of an event in the past tends to be followed by the recall of the events which succeeded it, in the order of their succession. As with the first type, so with both the others, explicit remembering is not necessary to demonstrate cohesion. Illustrations in plenty can be obtained from athletic sports and games. The determination of the succession of acts by the dominant interest in a game like cricket or football is an illustration, at one and the same time, of both these types. It is evident that all the facts of all these three types can be explained by cohesion functioning under the three kinds of conditions, and in the three different ways, which we have indicated. As with selection, it is unnecessary

<sup>1</sup> See *Education : Its Data and First Principles*, p. 34.

to discuss cohesion in detail at present, seeing that we must return to it later.

### THE TYPES OF CONSCIOUS PROCESS

Introspective examination of our own experience reveals the fact that we may be conscious in different ways, which do not seem, even on an ultimate analysis, reducible to one another. For example, I may simply perceive an object, see it, or hear the sound of it. Or I may be pleased or displeased with it, afraid of it, or curious about it. Or, lastly, I may desire to gain possession of it, or strive to alter it in some way. Obviously my mere acquaintance with the object, as seen or heard, is not identical with my feeling about it, nor is either identical with my experienced "urge" towards or away from it, or in connection with it. There appears to be an element in the feeling consciousness, which cannot be matched with any element in the mere acquaintance consciousness; and there is an element in the inward "urge" or striving consciousness which cannot be matched in either of the other types. At least this is the first verdict of introspection. More careful investigation may reveal aspects of each psychological situation which had previously been overlooked, but does not alter the essential truth of the verdict. The last word would appear to be, that knowing, feeling, and striving are irreducible to one another, though every conscious process involves all three as aspects, and the different modes of conscious process—perceiving, fearing, desiring, hoping, striving, and the like—are different because of differences in the emphasis or prominence of particular aspects in each case. It is certain that pure knowing, feeling, striving do not exist in the concrete; they are psychological abstractions.

The question may be raised, whether these aspects are irreducible, simply because they are psychological abstractions, essential but different aspects of a single process, and no more.

Introspective psychology answers in the negative, but finds it difficult to justify the answer, except on grounds which are metaphysical rather than psychological, on the ground, for example, of the different relation of subject to object in the different cases. But this merely shifts the difficulty. If the relation of subject to object is different in the different cases, why does every psychical process show all three aspects, and all three relations? The difficulty does not exist for the standpoint which we have adopted. Conscious process is always psychical synthesis or integration. It necessarily involves two factors or elements, one dependent on the life activity, the other in the normal case on the nature of environing conditions. So much we have already seen. But the synthesis or integration, as *conscious* process, always involves also a third and central factor, which is the psychological root of what we call "meaning." Hence the three aspects are not merely abstract aspects, but constituents of a synthetic whole, and the different types of conscious process are due to the shifting of emphasis from one aspect or constituent to another.

All this is so fundamental that it demands fuller discussion. It is obvious that meaning lies in a relation of something to us. Lloyd Morgan has drawn attention to an important distinction,<sup>1</sup> which is not consistently observed in ordinary speech, and the non-observance of which is undoubtedly an important source of the confusion that has arisen in connection with the term "meaning." That is the distinction between "meaning" and "significance." When the present experience stands for, or represents, some situation or experience to follow, we should speak of significance rather than meaning. The present situation is significant, is a sign, of what is not present but in our experience bound up with what is present. In order that any situation or object should have significance for us, it is evident that we must

<sup>1</sup> See article in *Journal of Experimental Pedagogy*, vol. III, p. 1.



have had past experience of that situation or object. A certain fairly high level of mental development is also necessary, but that is not relevant to the matter at present under discussion. The important thing is that past experience and past meaning are necessary in order to give significance, but significance is therefore complex and secondary. Now in the very first experience an organism has of a situation, there is a felt relation of that situation to the organism. It is this felt relation that is the root of all meaning, and later of significance. In a very special sense this felt relation is a central factor in that psychical integration which is consciousness. The whole biological significance of consciousness seems to hinge upon it. How consciousness can make any difference in the behaviour of an organism is an entire mystery apart from this felt relation, which is the meaning to the organism of the situation reacted to.

The general conclusion, then, to which we are led, is that in the last analysis feeling, interest and meaning are identical, and constitute this third or central factor in conscious process, the other factors being the cognitive and conative, of which more presently. The biological function of this central factor is regulative. That is to say, it regulates the direction the activity of the organism will take, and therefore the behaviour as a whole. Once we have apprehended the identity of feeling, interest, and meaning, we get light on many other things, which were previously somewhat obscure. Thus the earliest definitions given by the child are quite clearly based upon the feeling excited in the child. The definition in terms of use may seem to be an exception, but the exception is only apparent, for, if feeling is the regulative factor determining the mode of reaction to an object, what we do with an object is evidently the expression of the feeling with regard to it. Moreover Rusk <sup>1</sup> found that the responses of a young subject to abstract stimulus words in an association experi-

<sup>1</sup> *British Journal of Psychology*, vol. III.

ment were almost invariably of the same type: "I am hungry," "I am sorrowful," "I am merciful," and so on. The meaning is again in terms of feeling. Even the popular use of the word "significant" is to a great extent on the same lines, and consciously so.

More striking still is the way in which this view of meaning illumines Stout's teaching, in one of the most important chapters of the *Manual*. regarding what he calls the "acquirement of meaning." Stout summarizes the position thus: "(1) In all attention having continuity of interest and consisting of a series of distinct steps, a cumulative disposition is gradually formed which is the product of antecedent mental change, and a co-operative factor in succeeding mental change. (2) The after-effect of preceding mental process is not reproduced, but simply persists or is retained. (3) Its persistence in no way involves the persistence or the resuscitation of the specific items of sensation or mental imagery which have contributed to form it. These do not persist, but only their effects. If we denote the sequences of specific items of sense-experience, or, it may be, of ideal imagery, by  $a, b, c, d$ , then  $a, b, c, d$ , by no means adequately symbolizes the process as a whole. For when  $b$  occurs, the resulting state of consciousness is the joint product of  $b$  and the persistent disposition or after-effect left behind by  $a$ . Similarly when  $d$  occurs, the resulting state of consciousness is due to  $d$  in co-operation with the persistent disposition left behind by  $a, b$ , and  $c$ . We may denote the after-effect of  $a$  by  $m_1$ , the after-effect of  $a$  and  $b$  by  $m_2$ , and so on. The whole series may then be represented by  $a, bm_1, cm_2, dm_3$ . Now what does  $m$  stand for? What change or modification of consciousness does it represent? Clearly it represents the relation of the specific items  $b, c, d$ , to the whole of which they are part, a peculiar character which belongs to them in virtue of their being part of this whole. Now the only general word which is at all appropriate for expressing this

kind of consciousness is the word *meaning* or *significance*; *m*, then, stands for meaning or significance.”<sup>1</sup>

In view of the sense we have given it, following Lloyd Morgan, *significance* is not the word to use. Further the *meaning* is not primary meaning, as we have already indicated, and as Stout himself acknowledges in the succeeding paragraph. It is acquired meaning, or we may call it *secondary*, to distinguish it from the primary meaning involved in every experience of the organism as such. But how does it come about that these secondary meanings are acquired at all? Stout says it is through continuity of interest. This involves a cumulative disposition, and through this cumulative disposition an effect is produced on succeeding conscious processes by the conscious processes which have preceded. In other words, the secondary meaning has its root in the existing and persisting primary meaning, for that is what continuity of interest is in the last resort. If secondary meaning represents, as Stout says, the relation of specific items to the whole of which they are part, that which makes the whole a whole and the parts parts of that whole is the primary meaning representing the relation to the organism. Significance in its turn arises through secondary meaning, but only when a higher level of intellectual development is reached. The identification of primary meaning with feeling and interest thus leads to a great simplification at a point in psychology where simplification is eminently desirable.<sup>2</sup>

With respect to the other two factors in the conscious process, there is not a great deal to be added to what has already been said. So far as we are conscious of something, or apprehend something, we are said popularly to *know*.

<sup>1</sup> *Manual*, p. 183.

<sup>2</sup> See the present author's *Instinct in Man*, chap. VI. Professor Percy Nunn points out in a review of this book that the theory of meaning as primarily affective can be traced in Lloyd Morgan. See *Journal of Experimental Pedagogy*, vol. IV, p. 312.

But knowing in this sense is equivalent to the whole psychical integration, apart from the feeling factor which we have just been discussing. The best way to arrive at a clear notion of the two factors still involved is by means of an old distinction, which has had a rather controversial career in epistemology, but seems entirely valid and useful in psychology. That is the distinction between act and content. In simple sense perception the content—what is perceived—is determined by the nature of the object affecting our sense organs; the act, on the other hand—the perceiving—is clearly a manifestation of the active life process in the organism. The distinction gives us, therefore, precisely what we are seeking. There is nothing to be gained, however, by pretending that such an analysis is free from difficulties. There is indeed no serious difficulty with respect to the content side. With the act aspect the situation is very different. If this is to be taken as a manifestation of the life activity of the organism, how is it related to such other manifestations of the life activity as we have in, say, desire, or overt action? I am consciously active in apprehending an orange, and I am consciously active in moving my arm to take it. Is the conscious activity of the same order in the two cases? The answer is "Yes," so far as the activity aspect alone is concerned.

This is perhaps not the obvious answer to the question, but it is the answer that involves fewest difficulties. Apprehending, attending, desiring, acting, are all phases of the same activity. Of course as experiences they are different, and they differ functionally. They may also differ, as involving different levels of intellectual development, of which we shall have to speak later. But from the analytical point of view, as regards that aspect of the psychical integration which represents the life activity of the organism, they are of the same order. It is chiefly with respect to the various types of knowing—perceiving, imagining, judging,



and the like—that this conclusion strikes one as peculiar. The fact is, however, that in the concrete there are no purely cognitive states; nor are perceiving, imagining, judging, and the like ever isolated in the way the abstractions of the psychologist have led us to suppose. In the concrete they are all phases of the behaviour of a living organism relative to a situation. When they are regarded in this way, our conclusion no longer seems peculiar. The behaviour is a series of perceptions, judgments, desires, overt actions. Its manifestations are diverse, but the life activity is, as such, one. Moreover, even in the bare idea, so far as such an entity exists at all, there are involved incipient muscular contractions and movements, where they are relevant, and in other cases incipient assumptions of attitude; nowhere is there pure cognition and nothing else. So far the extreme behaviourists are very near the truth. But of this also more later.

#### REFERENCES FOR FURTHER READING

The works mentioned at end of last chapter, with DREVER: *Instinct in Man*. Cambridge University Press.

## CHAPTER IV

### THE GERM OF THE PERSON

WE have now reached a stage at which it is possible to enter definitely and explicitly on the consideration of the psychology of education. The plan it is proposed to adopt is to discuss first the development of the individual personality, independently of, and through, the various educational influences which are brought to bear, beginning with the feeling and action aspects, and passing on to the intellectual aspect. Thereafter we shall take up the consideration of the psychology of the school and school class, regarded as social groups. That is, the two main topics which fall to be considered are "the development of a person," and "the mind of a class," and we shall take them up in that order.

### NATIVE TENDENCIES AND CAPACITIES

Every living organism is a centre of vital forces, whether psychical or physiological. Some psychologists, obsessed with the idea that psychology must identify its point of view entirely with that of the physical sciences, have claimed that we know only events, not forces, and that when we speak scientifically we must eschew the use of the word "force," and attempt merely to describe events. We have already tried to show that this view is mistaken, and not truly scientific as far as psychology is concerned, that it neglects to take into account an important factor in the situation, the "inside view," as we have called it, and by doing so ceases

to be true to its facts. The validity of our view is best shown by acting upon it, and attempting to give some account of the forces themselves, many of which, it need hardly be mentioned, are actually experienced as "impulsions."

All living organisms—the human child not excluded—come into the world with certain capacities, some of them more or less mature at the outset, others merely in germ but maturing in the ordinary course of growth, and also with certain tendencies to react in more or less specific ways to more or less specific situations, tendencies which are to a striking extent characteristic of the species to which the organism belongs, both in respect of the situations which evoke them and the actions in which they express themselves. When we speak of the natural endowment of a child we refer to these capacities and tendencies. So far as the science of psychology is concerned, these are the child in germ. In the past the emphasis has nearly always been laid on the capacities rather than the tendencies, so that in popular speech "natural endowment" means simply natural capacities, and more especially those of an intellectual order. From the point of view of education this emphasis is undoubtedly wrongly placed. The capacities are certainly highly significant for education. "You cannot make a silk purse out of a sow's ear" is an old, familiar, and in a way a true saying. But it is the tendencies that require to be educated. The teacher must recognize the child's capacities as guides and limitations, but it is the child's tendencies which demand his fostering care. This profoundly important truth will perhaps become clear, if we think of the tendencies as interests. Every teacher knows that without interest school work cannot proceed, that no matter what his intellectual gifts may be, the child who has no interest in his school work makes no progress in that work. Every teacher ought also to know that, if the school does not succeed in establishing in the child permanent interests of individual and social

value by the time the school period is over, it has failed to attain its end, and failed utterly. From first to last in school life it is interest that counts, interest in the work of the school in the process of education, interests established and socially useful as its outcome. There is also little doubt that the qualities which tell most in life depend to a greater extent upon tendencies than on capacities. Recognition of this fact might be called the first principle of the teacher's art.

The native tendencies or interests of the human being have been recognized by psychologists from every early times, but without any very definite attempt to describe or explain them. It has also been quite generally recognized that animals exhibit analogous tendencies or interests, which have been always designated "instincts." The usage of the word "instinct," however, in connection with human psychology has been so arbitrary and indefinite, that the word could hardly be said to have a technical sense in human psychology prior to our own times. Recently McDougall has advocated a usage, followed fairly closely by several of the older psychologists and by William James, which has been hailed with something akin to enthusiasm by the great majority of those who are practically concerned with human psychology, doctors, teachers, and preachers more particularly, as not merely helpful, but illuminating, in their respective fields. According to this usage an instinct is defined as "an inherited or innate psycho-physical disposition which determines its possessor to perceive and to pay attention to objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a particular manner, or, at least, to experience an impulse to such action."<sup>1</sup> This practically means that the native tendencies or interests of the human being are the human instincts. The usage is undoubt-

<sup>1</sup> *Social Psychology*, p. 29.



edly an admirable one, and not only clears up the whole situation with respect to the sphere of instinct in the human being, but also brings the psychology of man and the psychology of the lower animals into such relations as to illumine one another. For many reasons, which will appear as we proceed, it is a usage that the educator cannot but accept with gratitude.

The capacities of the human being, as distinguished from the tendencies, present no particular difficulties as regards their general psychological description. These capacities fall into several distinct groups, as, for example, those represented by the avenues of sense experience, the so-called intellectual capacities—to perceive, to imagine, to judge, to reason—the capacity to learn, which might be said to cover at least two distinct types of capacity, that involved in remembering in the ordinary sense, and that involved in the acquiring of skill and dexterity in new modes of behaviour.

It is a commonplace that individual human beings differ from one another independently of their experience and education. The differences may be in the relative strengths of the various natural tendencies. Such differences we usually speak of as differences of natural disposition. Or it may be the differences are with respect to the efficiency of certain capacities. Such differences, on the other hand, we usually regard and designate as differences of intelligence or intellectual ability, where they are not mere differences in the efficiency of a sense organ. Within recent times it has become possible to test and measure with some degree of adequacy and accuracy the various phases of intellectual ability. Much has been made of the success attained in this field, and its importance not merely for education, but also for medicine, industry, civics, and politics. The very real success and undeniable importance in all these fields need not be minimized. But it ought to be clearly understood that the various mental

tests, of which we shall have occasion to speak later, ought not to loom so large in the educator's mind, as to obscure no less important factors in native endowment, which we are not yet able to test and measure. The fact must be emphasized once more that an individual's tendencies are educationally and socially more important than his capacities, however important the latter may be, and despite the contrary belief on the part of the man in the street. In school, and in life no less, it is the driving power that counts in the long run. Until the problem of testing and measuring this driving power is solved, mental measurement is but a broken reed for the teacher to rely on.

But tendencies and capacities are not unrelated to one another. It is a familiar fact of everyday experience that the individual who has a special gift in any particular direction has also a strong interest in the same direction. The musically gifted is also musically inclined; the individual with good artistic, or literary, or philosophical capacity develops readily, and, as it were, naturally, a taste for art, or literature, or philosophy. There may be exceptions, but this is the general rule. The explanation of these facts is not difficult. Both capacity and tendency are represented by the same physiological or psycho organic structure. Good capacity is simply the smooth and efficient working of the structure, tendency the life force or impulse expressing itself in this particular activity. Naturally, therefore, we should expect to find specialized capacity and specialized tendency going together. This natural condition is established and fortified, if also occasionally modified, by other factors. Successful and efficient activity is itself agreeable, and the agreeableness involves an added stimulus to such activity. Other tendencies, more particularly those involving the self, may come to express themselves in those activities which are most efficient, as, for example, in the case of social rivalry or under the conditions which give rise to compensatory defence mechan-

isms. Hence the frequency with which the boy or girl's taste develops along the lines of his or her capacity, sometimes, in the case of strong capacity, in spite of the influence of a mistaken education or bad environmental conditions.

The reader may perhaps at this point be inclined to ask whether there are not other important differences between individuals, which cannot be classified under the head of either differences of disposition or differences of intelligence. Particular examples of no slight importance are the differences we usually characterize as differences of temperament. The fact seems undeniable. How then are we to relate such differences to those already recognized? The answer is by no means easy, not because the differences in question are elusive, but rather because the differences are complex, and the popular usage of the word "temperament" is somewhat vague. What are popularly described as differences of temperament appear to be in part differences in the relative strengths of *groups* of tendencies, and in part in the relative prominence of *groups* of capacities. There appear to be in fact *correlated groups* of capacities and of tendencies, variation in which forms the basis of recognized differences in temperament. But there are undoubtedly other differences, which have most probably a purely physiological basis. One individual may react with movement, thought, or feeling more rapidly than another, independently of any difference in tendency or capacity, unless we regard such rapidity of reaction as representing a special capacity. Or again emotional disturbances, as expressed in what we call the "organic resonance" of emotion, may be more pronounced in one individual than in another, also independently of any difference in tendency or capacity, unless we recognize a capacity for emotional control. In any case these are general and pervasive differences of the sort we usually denominate temperamental.

## THE NATIVE TENDENCIES OR INSTINCTS

In every living organism the life energy manifests itself, as we have seen, in specific ways. Some of these ways may be regarded by the physiologist as falling wholly within his sphere. Thus the vital processes in the various organs of the body, so far as our present knowledge enables us to determine, appears to be purely physiological, though not necessarily purely physical or chemical. It is certain at least that the psychologist can throw no light on them, and that the methods of study he employs are not in any way applicable to them. Nevertheless not a few facts seem to indicate that even in this region of phenomena, though in a way unknown to both physiologist and psychologist, physiological processes touch closely upon psychical and psychical upon physiological. We must recognize, while we cannot in the meantime explain, such facts as the production of definite structural changes in the body through suggestion, modification, that is, from the psychical side of what appear to be purely physiological processes, and the like. Other specific manifestations of the life energy have quite definitely a psychical aspect or phase. These unmistakably fall within the sphere of the psychologist.

For practical purposes the field of study of the psychologist is sufficiently clearly marked off from that of the physiologist by the distinction between "behaviour" and "mechanism." The behaviour of an organism is the activity of the organism as a whole in responding to a stimulus, or reacting to an object or situation. It is directed or determined from within the organism, and always towards a definite end. That is to say, behaviour is always unitary, self-determined, and teleological. Such activity it is only possible to interpret in psychical terms. But, on the other hand, the component elements in behaviour may be activities of a purely mechanical order, either dependent upon the



activity of physiological mechanisms in the physical structure of the organism, or arising as a purely physico-chemical response of material substance to physico-chemical stimuli. In part then, and in one aspect, behaviour may be regarded as a complex of reflexes, tropisms, and the like. But in another aspect, and as a whole, it represents the organizing of these reflexes and tropisms, which are, as it were, caught up into the life movement, in the activity of the organism as such. In the first aspect it may be studied by the physiologist; in the second it can only be studied by the psychologist.

The organism begins its individual life with more or less specific forms of behaviour towards more or less specific objects or situations. These forms of behaviour are specific manifestations of the life energy, the expression of specific tendencies or impulsions. As we have already seen, the term "instinct" has been traditionally applied to such specific tendencies and impulsions, more especially as manifested among the lower animals, and the term has also been commonly extended so as to cover the specific forms of behaviour as well. Moreover, the adjectival form "instinctive" has been frequently used in the same senses. Adhering to McDougall's view, we may specialize the word as a technical term in psychology to be employed in these senses alone. From the dynamic point of view "instinct" and "instinctive" must be used primarily to designate the impulsion, and secondarily the form of behaviour in which the impulsion expresses itself; structurally the same terms designate the psycho-physical disposition in the psycho-organic system, by means of, and through, which the life energy actualizes itself. For the present we are taking the dynamic point of view, and an "instinct" is therefore equivalent to a native tendency or impulsion towards a definite form of behaviour, and also at times the form of behaviour which this tendency or impulsion determines.

The instincts of the human being can be classified either on a biological or on a psychological basis. If we seek to classify them on a biological basis we look naturally to the biological ends which they subserve. There are two great biological ends—the preservation of the individual life and the perpetuation of the species. It is evident that every natural tendency, when regarded from the biological point of view, is likely to have a bearing on one or other, or both, of these ends. Accordingly in a biological classification the instincts will apparently fall into two main subdivisions, according as their biological end is self-preservation or the propagation of the species. In reality such a classification is much simpler in theory than in practice. There are various complications. In the first place there is the fact that in the human being, in many of the higher animals, and indeed in living organisms at all points in the scale, a third biological end has been evolved with the development of some sort of social or group life, the end in this case being the maintenance and preservation of the group. Hence there will be a third subdivision into which instincts may fall. Moreover the formation of the group has itself a biological end, which may be wholly or mainly with reference to self-preservation, or wholly or mainly with reference to the propagation of the species, or equally with reference to both ends. In the second place classification is in practice complicated by the fact that any single instinctive tendency may be significant with reference to more than one biological end. It is evident, therefore that any classification of instincts on a biological basis cannot profess to be more than tentative, and further that it can only have validity, such as it has, for the one particular species, with reference to which the classification is made.

The psychologist should set his face strongly against the prevailing tendency to speak of *an* instinct of self-preservation, *an* instinct of sex, *a* herd instinct. Some such primor-



psychological standpoint. One group is characterized by the fact that the tendency is evoked by experiences which are disagreeable or agreeable, and, as it were, because of the disagreeableness or agreeableness, while the end sought has reference merely to this disagreeableness or agreeableness. Such tendencies may be designated "appetitive," but of course "aversions" must be included as well as "appetitions." The second group is characterized by the fact that the tendency is evoked as the reaction to a certain object or situation, which is apprehended, while the end sought is with reference to that object or situation, and may be pursued independently of any immediate disagreeableness or agreeableness. This group may be appropriately designated "reactive," as opposed to "appetitive."

Theoretically the distinction appears quite clear and valid. When we seek, however, to apply it practically, it is not without its difficulties. In the lower animals, and in man also, though possibly to a less extent, the evoking of any particular reactive tendency may be dependent on a definite setting in the organism, which presumably determines a definite feeling state. Hence it may be argued that in such cases the instinctive tendency originates in experienced feeling, and the distinction between reactive and appetitive no longer exists. But a closer examination of such cases will probably convince us that the distinction still remains. The comparison of hunger with anger will bring it out clearly. Using the word "hunger" to mark the tendency not the complex of sensations, we may say that this tendency is directed towards the removal of the "uneasiness" from which it originates. But in the case of the anger aroused, say, by a blow, activity is directed not towards the removal of the uneasy sensations caused by the blow, but towards the destruction of the agent from which or whom the blow emanates. If it is urged that in anger there is still some sort of "uneasiness," which can only be removed by action



of the kind that takes place, the answer is twofold. In the first place "uneasiness" is now being used to describe a wholly different condition, and a condition which is secondary to an already existing tendency; and, in the second place, the activity is in no real sense directed towards the removal of the "uneasiness," but, as we have said, towards the destruction of the enemy.

In the second place, among both appetitive and reactive tendencies we can distinguish between tendencies which are relatively specific, and tendencies which are relatively non-specific or general. In this case the two types pass into one another as far as the human being is concerned, but at the extremes they are quite clearly distinguishable. The specificity of the one type is a specificity both of evoking conditions and of response; the non-specificity of the other type is similarly non-specificity both of evoking conditions and of response. Among the appetitive tendencies hunger and the tendency to prolong or seek agreeable experiences, and among the reactive tendencies fear and play, may be taken as adequately representing the two types.

There is a third psychological distinction, which can be drawn, but it is so important, and also involves considerations so complex, that a separate section must be devoted to the discussion of the basis upon which it rests. This distinction is the distinction between "simple" and "emotional" among the reactive tendencies.

### INSTINCT AND EMOTION

William James in his *Principles of Psychology* writes: "Instinctive reactions and emotional expressions shade imperceptibly into each other. Every object that excites an instinct excites an emotion as well."<sup>1</sup> Now McDougall, as we have already seen, defines an instinct as an inherited psycho-physical disposition, which determines its possessor,

among other things, "*to experience an emotional excitement of a particular quality.*"<sup>1</sup> Thus James calls attention to the close relation between instinct and emotion; McDougall attempts to explain this relation, maintaining that every instinct involves in its activity an emotional excitement, that emotion is in fact nothing other than the central and enduring element in an instinct.

Before coming to any definite decision as to what appears to be the truth in this matter, it is essential that we should be clear as to the exact nature of that which we are designating "emotion" or "emotional excitement." It is tolerably certain that both James and McDougall had good grounds for the views they have expressed, and in spite of the controversies which have raged about the theories of both, it is worth while endeavouring to see how far, and in what sense, their theories are valid. The theory of emotion associated with the name of James, and torn to rags by so many psychologists during the last thirty years, itself suggests the desirability of noting carefully the differentia of emotion which James is employing. Similarly, if McDougall is right, the psychologist must recognize many more emotions than we have names for in ordinary speech, and apparently we are frequently emotionally excited without our being aware of the fact. On the other hand it is also well to remember that most of the strong and well-marked emotions we experience are, as James contends, closely related to instincts equally well marked, even if they should not be related in the way McDougall would maintain.

In all those emotions which are universally recognized and described as emotions certain characteristics manifest themselves. Of these three are important. We have always present a marked affective colouring, a "perturbation" of mind and body, and an impulsive force. The state is complex, not simple, as McDougall's theory would perhaps lead us to

<sup>1</sup> *Social Psychology*, p. 29.

expect. If then we are to understand "emotion" and "emotional" in the sense of ordinary speech, we must apply the terms to a complex experience, not to an element in experience. Whether there is sufficient reason for departing from this ordinary usage we shall inquire later.

We may bring out, and at the same time remove, the chief psychological difficulties in connection with a theory of emotion by attempting to answer two questions. The first question is this: What makes an emotion emotional? In other words, what is the differentia of emotional experience? According to James's famous theory, it is the organic resonance, the bodily perturbation, that marks off the emotion as such; as an experience the emotion is nothing but the experience of the organic and bodily changes produced by the evoking stimulus. Recent work in physiology has thrown considerable light on this perturbation, both with respect to its character and with respect to its causation. In the opinion of most physiologists the general results are on the whole unfavourable to James's theory, if that theory is taken literally. Some go so far as to maintain that the theory has been definitely disproved and must be set aside.

Profound changes in respiration and circulation have long been familiar as physiological phenomena of emotion. More recently glandular phenomena of great importance have been identified and studied. The activities of the various ductless glands, and more particularly of the suprarenal glands or capsules, have been shown by Cannon<sup>1</sup> and others to be accompaniments or effects of emotion, and to exert a profound and widespread influence on the whole organism. With respect to the physiological causation of these phenomena, two leading facts have been revealed. The first is that the various nerve centres, which are outside, and to a considerable extent independent, of the cerebro-spinal system—the autonomic system—are involved in the changes. The second is

<sup>1</sup> See *Bodily Changes in Pain, Hunger, Fear, and Rage*.

that there is an important affective centre for the cerebro-spinal system in the thalami—ganglionic masses lying centrally at the base of the cerebrum—and that the activity of this centre shows features which are closely analogous on the physiological side to features of emotional experience on the psychological side. In fact, emotional excitement as such can be readily interpreted in terms of what we now know of the activity of these thalamic centres.

These facts are summarized thus baldly because it is quite impossible to treat them in detail at present, and only the general results are relevant to the topic under discussion here. The net outcome is that the physiologist is now able to describe with remarkable accuracy and completeness the physiological manifestations of emotion. So far as the behaviour of the organism is concerned, there is no room for doubt that these physiological processes are an essential element in the emotion, and from the more recently discovered facts there is strong presumption that they determine also an essential part of the emotion as experienced. In other words, James's theory would appear to be substantiated, rather than the reverse, up to a certain point, and it is extremely doubtful whether James himself would have asked for more. We would conclude, therefore, that what makes an emotion emotional is in a large measure the organic disturbance that takes place. For the external observer this represents the emotion, so far as it is directly observed; for the individual himself the experience of the widespread organic changes is without question an essential and characteristic element in the experience as a whole. But the part must not be identified with the whole. It is no less certain that emotional excitement as an experience involves an affective element and also an impulsion, which are different from, however intricately they may be interwoven with, the organic resonance.

Our second question is : What is the relation of this organic



perturbation, which we are taking as the differentia of emotion, to the instincts? Again recent work by the physiologists and neurologists has cleared the ground for us. The activity of the emotional centre in the thalamus is, we have already indicated, of such a nature as to afford us a close analogue on the physiological side of what we know as emotional excitement on the psychological. It may be well at this point to specify the main ways in which the analogy holds. The activity of the thalamus is of the protopathic, as distinguished from the epicritic order. These terms were employed in the first instance to distinguish two distinct types of cutaneous sensibility, carefully studied by Hetd and his collaborators.<sup>1</sup> These distinct types were first discovered as a result of the section and subsequent regeneration of a sensory nerve supplying a certain area of the skin. One type was found characterized by an indefinite vagueness, a lack of discrimination, localization, or gradation, a pronounced feeling tone, and a tendency to react almost reflexly and violently with movements of withdrawal. Another type was found characterized by definiteness, precise localization, discrimination, absence of marked feeling tone and of the impulsive response. The same kind of relations seem to hold as between processes in the thalamus and processes in the cerebral cortex. Now it is characteristic of the cruder emotions that the reaction is indiscriminating, diffuse, not in any way graduated in proportion to the stimulating conditions, violent, and almost reflex. If, now, we suppose that under certain conditions an instinctive response involves the activity of the thalamic centres, and especially if the higher control of the cerebral cortex ceases to operate, we seem to have a clue to the relation between instinct and emotion. The emotional disturbance or perturbation would then appear as part of the instinctive response, evoked as such when certain determining conditions were present.

<sup>1</sup> See *Brain*, vols. XXVIII, XXXI, XLI.

But we must distinguish different cases. Emotional perturbations of a kind familiar in everyday experience, and marked by definite words in ordinary speech, occur only in connection with certain instincts, as, for example, the instinct of escape from danger, of active aggression, and the like. Such emotional perturbations are not usually characteristic of the operation of general tendencies, like play, or simple instinctive reactions, like those involved in adaptation and adjustment, or locomotion, or vocalization. Not only so, but they do not always occur in connection with the operation even of instincts of the former class.

Take now McDougall's theory of the relation of instinct to emotion. In the case of some of the most powerful and fundamental tendencies of human nature, it is undeniable that similarly powerful and fundamental emotions are usually found operating. But it is also certain that these very tendencies may be evoked without any significant or observable emotional disturbance. There is a general law, to which attention has been called in this connection by Rivers,<sup>1</sup> that "manipulative activity" and "absence of affect" tend to go together. "There is abundant evidence," he says, "that manipulative activity in response to danger is, or may be, wholly free from fear, or from any other emotion, except perhaps a certain degree of excitement." This would seem to imply, in the light of what we have said, and in physiological terms, that so long as the control of the cortical centres is effective, the activity is epicritic, and we have "manipulative activity"; when this control ceases to be effective, we have protopathic activity and "affect." Can we not say then that so long as the instinct mechanism is working smoothly, emotion is almost or quite absent? If so, we cannot admit that the emotion is a necessary integral part of, or at least the central and permanent element in, the instinct.

On the other hand, when the instinct mechanism does not

<sup>1</sup> *Instinct and the Unconscious*, p. 57.

work smoothly, an emotional perturbation makes its appearance as part of the response of the organism to the situation. The principle is quite general, and applies to all kinds of tendencies or conations, primitive and acquired alike. When in ordinary conversation our attempt to find the exact word to fit our meaning is baulked, an emotional disturbance may supervene, the effect of which may be to precipitate the employment of a word neither adequate nor appropriate. This experience is a very familiar one. But nevertheless it is certainly characteristic of certain great tendencies of our nature, that the emotional perturbation arises with extreme facility, and is normally involved in the instinctive response. Moreover, our experience in such cases is so definite and unmistakable that these perturbations have received special names, and are universally recognized as special and typical emotions. Thus far at least is McDougall's theory valid.

### PSYCHOLOGICAL CLASSIFICATION

Before going on to consider further the affective element in instinct, we must return to our classification of the instincts on a psychological basis. All that seems necessary is to present this classification in tabular form, so that it can be compared and correlated with the classification on a biological basis already given.

#### INSTINCTIVE TENDENCIES

Appetitive		Reactive		
General	Specific	General	Simple	Specific Emotional
Unpleasure avoidance	Hunger	Play	Prehension	Flight
Pleasure-seeking.	Thirst	Experimentation	Organ adjustment	Pugnacity
	Rest	Imitation	Locomotion	Curiosity
	Exercise	Sympathy	Vocalization, etc.	Self-display
	Sex	Suggestibility (?)		Self-abasement
	Nausea			Parental
				Gregarious
				Hunting
				Acquisition
				Courtship (sex)
				Repulsion (?)

## FEELING, INTEREST, AND MEANING

As a result of our study of emotions three important facts have emerged. The first is that the emotion is always complex, and not a simple feeling element. The second is that the primary emotions, as McDougall designates those emotions which are closely bound up with that group of reactive tendencies we have classified as "emotional," are not as such the affective elements of the instincts in question, but rather parts of the instinctive responses under special conditions. The third is that all tendencies may exemplify the development of an emotional phase. We may in fact speak of the emotional phase of affective experience, because it is in virtue of the elementary "affect," which the tendencies carry with them, that the emotional perturbation arises. We have left for consideration from the educator's point of view this elementary "affect," so far as it is involved in instincts, and more particularly those of the emotional group.

The discussion can be made brief. According to McDougall's view an instinct presents in its activity the three essential aspects of all conscious process, cognitive, affective, and conative, and of these the affective must be regarded as the central and permanent element. We have declined to admit that this affective element is "emotion," as McDougall contends, while accepting his general teaching. We prefer to designate it "instinct interest" or "instinct feeling." Its importance, however, is not thereby affected. Every interest and every meaning involved in the activities of life, and therefore of the school, can be traced back to this element in instinct experience. In the group of emotional reactive tendencies more particularly we have represented the most fundamental primitive interests of the human being, and the source of all the great interests and all the vital meanings of human life, primitive or civilized. Nothing will ever appeal to child or adult except so far as it appeals through the evoking



of these or such tendencies in their crude, their playful, or their developed form. And to look for meaning in experience, apart from such tendencies, is as futile as it is to expect direct perceptual acquaintance with green leaves in the experience of a person blind from birth.

### JOY AND SORROW

This chapter cannot be brought to a close without some mention, however brief, of those important general phenomena of our emotional life, which we designate "joy" and "sorrow." Both joy and sorrow are popularly regarded as emotions: yet neither is an emotion in any strict sense. We can recognize McDougall's primary emotions, and his derived emotions, involving or not involving the existence of sentiments. We can also recognize Shand's "emotions of desire," such as hope, despair, and the like. But the experiences to which we give the names joy and sorrow can be classed with none of these. The fact seems to be that both joy and sorrow are general characters of emotion, representing in the emotional phase that bipolarity which characterizes all affective experience.

This means that, when the emotional phase of affective experience develops, it tends towards the joy pole or the sorrow pole, if we may speak in such terms, and necessarily so. The conditions determining either of the directions are fairly clear. So far as the underlying tendency is being delayed, obstructed, or balked, the direction is towards the sorrow pole; so far as the tendency is meeting with sudden, unexpected, or rapid success, and particularly if the situation is such as to increase the stimulation, the direction is towards the joy pole.

That this is the true analysis of joy there can be little doubt. With respect to sorrow, it may be argued that, in many cases at least, it is a true emotion, associated with the

parental or protective instinct, or, more plausibly, with the love sentiment. As far as popular usage is concerned, the contention is perhaps sound, but even in popular speech the term "sorrow" is not specialized for either of these emotions, being also used as the opposite of joy. For psychological purposes it ought to be specialized in this last sense

#### REFERENCES FOR FURTHER READING

1. McDOUGALL: *Introduction to Social Psychology*. Methuen.
2. THORNDIKE: *Educational Psychology. The Original Nature of Man*. Columbia University Press.
3. TROTTER: *The Herd Instinct in Peace and War*. Fisher Unwin.
4. ADLER: *The Neurotic Constitution*. Kegan Paul.
5. WHITE: *Mechanisms of Character Formation*. Macmillan.
6. CANNON: *Bodily Changes in Pain, Hunger, Fear, and Rage*. Appleton.
7. WOODWORTH: *Psychology, A Study of Mental Life*. Methuen.
8. DEWEY: *Human Nature and Conduct*. Allen and Unwin.
9. FINDLAY, J. J.: *Introduction to Sociology*. University of Manchester Press.

## CHAPTER V

### MENTAL DEVELOPMENT

MENTAL development takes place independently of education in the natural process of growth, and by means of education. The former is the more fundamental, and in strictness the function of education is to direct and modify in specific ways the process of natural development. This holds in an absolute sense, however, only of school education. If education be taken in a wider sense, then we may say that education is an essential factor in the natural development of the human being. Without the education of circumstances, the development of the human being would necessarily stop at a point far short of that attained even by the most primitive savage. In actual fact the need of education is a measure of the possibilities of development in any living organism.

#### PHASES, LEVELS, OR STAGES OF DEVELOPMENT

The notion of phases or levels in mental development has become very familiar in recent years ; so familiar, indeed, that there is some danger lest we should become slaves to the words to such an extent as to ignore the facts, or at least entirely to misapprehend them. It ought not to be forgotten that the phases and levels of which we speak are of our own creation with the object of conceptually grasping the complex actuality, and that development itself is always and everywhere continuous. Nothing emerges at any stage,

the germ of which was not present at an earlier stage; nothing that is present at any stage, but is carried on in some form or other into later stages. The higher level never supersedes the lower which it has grown out of; it merely emerges as an addition to the lower, resting upon the lower, and incapable of existing without it. It is only when these qualifications are kept in mind that it becomes possible profitably and without danger to speak of phases and levels in mental life.

These cautions observed, we can recognize in the mental life of the human being three relatively clearly defined stages or levels. The stages or levels appear equally when we consider cognitive or purely intellectual processes, behaviour or external action, feeling or inner motive. They are also apparent when we examine the manifestations of mind in the whole scale of organic life. On the cognitive or purely intellectual aspect the planes, levels, or stages may be designated respectively perceptual, ideational, and rational. On the affective side they are represented by immediate feeling or crude emotion, sentiment, and ideal or principle. With respect to external behaviour the terms "instinctive" and "purposive," or "intentional," as ordinarily used, serve to mark the extremes, but for the middle range of behaviour, controlled and guided by ideas, but not consciously purposive, we have no special term; perhaps the term "ideomotor," used in a special sense, might meet the case. "Ideomotor" behaviour would then be behaviour which is guided neither by the immediate experience of the present moment, nor by a conscious end or purpose, but either by past experiences "remembered," or future events anticipated.

This middle range of behaviour, in its external aspect, is best illustrated by the "deferred reaction experiment" in animal psychology. An animal is closed in a box with several exits, only one of which is open in any one experi-



ment. The one open is indicated to the animal by a light. First of all the animal learns in the usual way that it can get out of the box to its food by the exit which is lighted, and that alone. After this has been thoroughly learned, the animal is kept in the release chamber of the experimental box for a period of time after the light has been exhibited to it and turned out again. Its finding of the right exit in this case is evidently conditioned by its "remembering" the exit where the light had been shown.

The best descriptive terms for these levels or stages are the first. We must, however, recognize that the levels are not merely intellectual or cognitive levels, but levels in the whole mental life, which is never merely intellectual or cognitive. Thus at the perceptual level the only motives which can operate are immediate feelings and crude emotion, because the mental life covers only the experience of the present moment; at the ideational level the development of sentiments becomes possible, and there is escape from the slavery to immediate feelings and crude emotion; at the rational level even sentiment may be superseded by the ideal or principle, with which the individual after reflection has consciously identified himself.

This recognition of levels is quite fundamental for educational theory and practice, and no practical solution of many of the most important and the most pressing problems in education is possible without keeping them in view. A single illustration will perhaps suffice. Take the freedom of the child, which is being so much emphasized in education at the present time. It is obvious that before freedom can become a practical ideal we must interpret it in the light of our knowledge of the phases and levels of mental life. A child or an adult may be living in the veriest slavery, though absolutely free from anything in the shape of external restraint or interference—slavery, that is, as a human being—if the higher levels cannot realize themselves

because of the dominance or insistence of the lower. In our advocacy of freedom for the child we must not forget that the true freedom of the adult is inner freedom on the rational level, which may well be irretrievably lost and destroyed by well-meant but ill-directed attempts to give a freedom which, if education means anything at all, involves in the long run a negation of true human freedom.

### THE LAWS OF DEVELOPMENT.

In his exceedingly important book *The Foundations of Character*, Mr. A. F. Shand has made an attempt to formulate what he calls the "laws of character." The problem he has set himself is of the highest significance. In the solution of such a problem we must seek, if anywhere, for a real basis for the science of education. It is perhaps a little unfortunate that Mr. Shand has enumerated so many laws without indicating in any way their relative importance or attempting a classification. Some of his laws also are scarcely entitled to be accorded the dignity of laws, but are rather general statements of the occurrence of certain phenomena under relatively narrow and special conditions, often with scarcely more validity or more comprehensiveness than the proverbial maxims and saws to be found in every literature. Nevertheless some of the laws he has formulated are beyond question fundamental, and he has at least shown the possibility of developing a science of human character.

Among the "laws of character," the premier place must be assigned to what may be designated "laws of development." The work of James, McDougall, and Shand has brought to light seven such laws, and these laws have received further illumination from the work of Freud, Jung, and the representatives of the new psychopathology generally. These laws we must now proceed to consider.

1. The first law may be designated the *law of development by stimulation*. It may be formulated thus: *the more frequently a natural tendency is evoked, other circumstances remaining unchanged, the more readily can it be evoked, and the more powerfully does it operate*. Illustrations of the operation of this law are by no means difficult to supply. The more frequently the escape tendency, and the emotion of fear, the fighting tendency, and the emotion of anger, and others of the stronger tendencies and emotions are evoked, the more do the corresponding emotional attitudes come to characterize an individual. Timidity, quarrelsomeness, emotional instability may be congenital, but there is no doubt that they can also be developed. The phenomena could possibly be brought under the general rubric of habit by interpreting that sufficiently widely.

2. The second law we may call the *law of selection by experienced results*. This law has a very wide application, and is one of the fundamental principles of all learning. *Those actions tend to be discontinued which lead to unsatisfactory or disagreeable results; while, on the other hand, successful reactions, or those which involve agreeable results, are established*. All instinctive tendencies may be regarded from the outside as inherited "reaction patterns." As such they involve a more or less complex group of simple reactions—"reflexes." Through the operation of this law the individual simple reactions may be modified, shifted, suppressed, without the "reaction pattern" as a whole showing any marked change. Moreover, in the case of the human being and the higher animals, with the great emotional tendencies, like the danger instinct and the fighting instinct, which seem to have associated with them more than one congenital "reaction pattern," different "reaction patterns" may be selected to meet different situations. Thus escape by flight, by concealment, by immobility, may each be the pattern selected as a result

of experience to be the usual mode of response to a particular situation. It should, however, be noted that a large and essential part of the "reaction pattern"—the organic resonance—probably remains present always in greater or less degree, so that the phenomena are not different from the others except as regards complexity.

But the operation of the law may be on a still wider scale, and may involve still more complex phenomena. It must be premised that the selective agency is at bottom the general appetitive tendency to seek pleasure and avoid unpleasure. The conditions evoking this tendency may be conditions brought about through the operation of another instinctive tendency. Hence in these circumstances a condition of inner conflict must arise. Such conflicts always represent definite stages in the development, and crises in the educational history of an individual. Any one of several things may happen. The instinctive tendency may realize its end in spite of the disagreeable experiences involved, and, by drawing upon other sources of energy, with more energy than if no disagreeableness had been experienced. Or the instinctive tendency may be entirely suppressed, as far as any observable results, normal or abnormal, are apparent. Or the energy of the instinctive tendency may be drafted into other lines of activity, in which the disagreeableness is not encountered. Or finally there may be recurrent conflicts, with victory going now to the one side, now to the other, or with abnormal dissociation phenomena requiring the attention of a psychiatrist. Which of these results will follow will depend partly on the particular instinctive tendency concerned, partly on the kind and degree of disagreeableness experienced, and partly on circumstances. So also with the educational significance of the events.

Freudian psychologists have made the conflict between the Pleasure Principle and the Reality Principle one of the foundation stones of their psychological theory. Super-



ficially regarded, the facts seem to be as they assert. But their analysis is inadequate and far from complete. Abstract "principles" explain nothing. Nor can we accept the view implied in the use of the designation "Pleasure Principle" for the most primitive type of motive. The child or the savage may be insatiable in the pursuit of the satisfaction of crude and primitive impulses, but to call this the seeking of pleasure is to misread the facts of the psychological situation altogether, and at the same time to obscure the fact of fundamental significance—that the Reality Principle itself becomes effective through the avoidance of the disagreeable and the seeking of the agreeable, if we take "Reality Principle" in the Freudian meaning.

3. The third law is that which James has called the *law of "inhibition by habit."* The designation is scarcely a happy one for the law as expressed by James himself. "*When objects of a certain class,*" he says, "*elicit from an animal a certain sort of reaction, it often happens that the animal becomes partial to the first specimen of the class on which it has reacted, and will not afterward react on any other specimen.*"<sup>1</sup>

Habits in the ordinary acceptance of the word are not acquired after a single repetition of an act. Where such seems to be the case we naturally look for some further explanation of the event. The examples cited by James—"the selection of a particular hole to live in, of a particular mate, of a particular feeding-ground, a particular variety of diet"—indicate the kind of facts he has in view. In no case do they show anything that ought to be called the "inhibition" of instinct, but merely its limitation and definition, and in many cases the limitation and definition are not nearly so absolute as he suggests. When in such cases the instinct passes into what may properly be called habit, it does so because at the outset, in the first eliciting of the response, particular objects have acquired a meaning

<sup>1</sup> *Principles of Psychology*, vol. II, p. 394.

from associated affective experiences, which henceforth gives them a prepotency over other objects, equally suited perhaps for the evoking of the tendency initially, and even yet not wholly indifferent. Thus at the purely perceptual level we may have a definite association of feelings and tendencies with particular objects, of the same general nature as what we call a sentiment at a higher level, and functioning to some extent in the same way, for this is the way, as we shall see later, in which a sentiment functions, and a sentiment might be regarded as a particular exemplification of this third law.

4. The fourth law is—again according to James's terminology—the *law of transiency or transitoriness*. Once more we may take that author's formulation: "*Many instincts ripen at a certain age and then fade away.*"<sup>1</sup> It will be observed that James says "many," not "all." It is certain that the law, expressed in this way, does not hold of any of the great fundamental instinctive tendencies of human nature, with the doubtful exception of the sex instincts. It is also exceedingly doubtful if any instincts can properly be said to "fade away," if by that we mean that they leave matters as if they had never been. The facts are much more complex than James's formulation would lead us to expect. But they are certainly no less important educationally and socially than James supposed, and the facts he had in mind are real and highly significant facts, whether his law can be held to cover them or not.

What James has mainly in mind is the change in the direction of an individual's interests in the course of his development from the child to the adult, and the fact that, unless a natural interest is seized upon and utilized at the proper time, that interest is broadly speaking lost for educational purposes. "If a boy grows up alone," he says, "at the age of games and sports, and learns neither to play ball,

<sup>1</sup> *Principles of Psychology*, vol. II, p. 398.

nor row, nor sail, nor ride, nor skate, nor fish, nor shoot, probably he will be sedentary to the end of his days ; and, though the best of opportunities be afforded him for learning these things later, it is a hundred to one but he will pass them by and shrink back from the effort of taking those necessary first steps the prospect of which, at an earlier age, would have filled him with eager delight." Hence "in all pedagogy the great thing is to strike the iron while hot, and to seize the wave of the pupil's interest in each successive subject before its ebb has come, so that knowledge may be got and a habit of skill acquired—a headway of interest, in short, secured, on which afterward the individual may float. There is a happy moment for fixing skill in drawing, for making boys collectors in natural history, and presently dissectors and botanists ; then for initiating them into the harmonies of mechanics and the wonders of physical and chemical law." <sup>1</sup>

Now all this is doubtless true and important. But there is more to be said. Even in what James says there are indications of two totally different kinds of result—on the one hand the missing of the opportunity for acquiring certain knowledge and skill, on the other hand the establishing of a definite and scarcely normal general trend. Though the latter is not the effect chiefly emphasized by James, it is unquestionably the most important, and it is apropos of this kind of effect that there is more to be said. In most cases the "fading away" of an instinct is apparent rather than real. What happens oftenest is that the energy, denied its natural outlet, finds other, and frequently—though not always—less desirable directions of flow. The phenomena that ensue will be best discussed in connection with the next law. In the meantime it may suffice to point out that the apparent disappearance of an instinctive tendency, like the tendency which finds its natural outlet in athletic games, for example, without the establishment of the normal habits,

<sup>1</sup> *Op. cit.*, vol. II, p. 401.

should itself lead us to seek to discover the forms in which the "missing" energy is really manifesting itself.

5. The fifth law is the *law of transference of impulse*. In this case, as in the case of the next two laws, we are following the terminology, and to a considerable extent the treatment, of McDougall. This fifth law may be expressed in the following terms:—*Under certain more or less definite conditions, and as a result of experience and circumstances, an instinctive impulse may come to be evoked in connection with objects or situations different from, and sometimes entirely unconnected with, those which originally evoke it.*

In some form or other this law has long been recognized by psychologists. Thus it was appealed to by Malebranche and by Spinoza, by David Hume and by Adam Smith, and great stress was laid upon it by James Mill and the English Associationists. In more recent times it has received full recognition from McDougall, and Freud, though specializing the term "transference" for phenomena of a relatively narrow and particular kind, has drawn attention to important and previously little understood phenomena which would undoubtedly come under our law. In fact it could hardly be otherwise, since a great part of our learning and our education, when we regard the motive side, must be looked on as exemplifying the operation of the law.

The most important case of transference in education, and probably in human life at large, is the transference of interest from an end to the means for attaining that end. Interest in an end becomes interest in the means for attaining the end, whenever the means are recognized as such. Of course this nearly always implies a fairly high level of mental development and certainly a far higher level than is necessary for the exemplification of the law in operation. Many writers have, however, illustrated its operation at far lower levels. Thorndike has asserted that an organism can be got to respond to any stimulus to which it is sensitive by



any reaction of which it is capable. And McDougall has discussed at length how birds on an uninhabited island, showing no fear of man originally, will quickly develop such fear, if a party of men land on the island and begin shooting them. Similar phenomena manifest themselves throughout the whole range of animal life, and a large part of the fears of the human being are without question "transferred" fears. Analogous developments may be traced in connection with the other tendencies.

Another highly important group of transference phenomena has been brought into prominence by recent psychological investigation, notably on the part of Freud, Jung, and their followers. To these transference phenomena Freud has applied the term "sublimation." In order to understand the processes involved, and the significance of these phenomena, we must make a short excursion into Freudian psychology. Without invoking the principles of Freud's very shaky psychology of the "Pleasure Principle" and the "Reality Principle," we may put the essential facts disclosed by the investigations of the school as follows:—The impulses, feelings, tendencies, with which the child starts in life, must be moulded, redirected, checked, so as to bring and keep the child adjusted to its expanding environment, physical, social, and cultural; that is what education means. In particular, impulses and tendencies, which are in effect anti-social, must be in some way eradicated. The eradication, which need not involve any conscious interference on the part of the adult by way of formal education, takes place by "repression." But the eradication of impulses and tendencies by repression is not the simple matter it was at one time thoughtlessly supposed to be, nor is the Freudian "repression" quite what was formerly understood, and what the man in the street still understands, by repression. Freudian "repression" involves endopsychic process, conflict, and the thrusting into the "unconscious" of the

repressed elements, where they are submerged and overlaid, but by no means inactive. Thus the energy involved in the repressed impulses and tendencies is not annihilated by their repression. Unless it can be transferred to activities which are not inconsistent with the demands of the wider life, social and cultural, into which the child is developing, the repression must be maintained by the utilizing of other energy, and a condition of strain or tension will persist, with the possibility of various rather serious complications, calling for the attention of the psychiatrist.

What happens in the normal case is that the major portion of the energy of repressed and baulked primitive impulses is, as it were, drained off into useful, or at least permissible, forms of activity. These forms of activity may be determined partly by other and unrepressed tendencies, the energy of which is thus greatly augmented. This is the process of sublimation. A remnant of energy will necessarily be left attached to repressed primitive modes of thought and action. So long as this repressed remnant is a minimum, relatively little strain or tension will be produced, and such strain or tension will find relief in dreams, phantasies, mirth, play, and the like, without the normal personality being greatly affected. It is of the first importance, however, that this repressed energy should be a minimum, on the one hand because it necessarily involves a certain wastage and loss of energy, a certain falling short of the fullest efficiency; on the other hand because it always represents the potential danger of serious complexes developing, or of serious lapses occurring, with change of circumstances.

Interesting, and sometimes very important, phenomena of the same order as repression phenomena are manifested in connection with what have been designated "defence" or "compensation" mechanisms. In order to avoid continually recurring disagreeable experiences, more especially those arising from a feeling of inferiority, an individual

may develop, sometimes perhaps consciously at first, but thereafter unconsciously, various methods of meeting or avoiding the disagreeable situation. When such methods establish themselves as unconscious mechanisms, functioning independently of the individual's will, we have a *defence mechanism*. The manifestation may be relatively harmless—a mere mannerism, artificial gaiety, pomposity, a never-resting tongue—or it may involve a serious dislocation of an individual's home or social relations. In every case it is deserving of special attention by the educator, whether parent or teacher, since it is generally symptomatic of some error in treatment, or defect in the environment, that ought to be attended to. The most promising treatment for the manifestation itself is through suggestion. A *compensation mechanism* is merely a special case of a defence mechanism, where the tendency, which has met with a painful check in one direction, finds compensating satisfaction or gratification in another direction. In general the same treatment is called for as in the case of the more normal type of defence mechanism, but it must not be forgotten that to some compensation mechanisms very great social value may attach.

6. The sixth law is the *law of fusion of feeling or emotion*. This law we may express in the form: “*primary*” emotions, *simultaneously evoked, fuse so as to produce an emotional experience, different from the emotions involved, and suo genere, but generally analysable into its elementary components.*

This law has been used by McDougall to explain the more complex types of emotional experience, and whether we agree with McDougall's analysis or not, it is certain that complex emotions may and do arise in this way, as it is true that the whole gamut of human emotion can be reduced to various combinations of a few simple and primary types. The law is of considerably less educational importance than the others we have discussed, however important it may

be for a full understanding of the complexities of man's emotional experience. What educational significance it has is mainly in connection with the religious and æsthetic emotions, and in these cases it is worthy of special note that a complex emotion can seldom exist in a state of high emotional intensity, the tendency being for the complex emotion to give place under such conditions to one or other of its simple components.

7. The seventh law is the *law of complication of behaviour*. This will take the form: *where different impulses are evoked by the same situation simultaneously, and different emotions fuse in the resulting emotional experience, the behaviour will tend to be always a complication of the behaviours corresponding to the respective impulses and simple emotions involved, with a varying emphasis according to circumstances.*

This law is best regarded as following from the law of fusion of emotion. As such it does not seem to demand any further discussion from our present point of view, though, as in the case of the sixth law, it is undoubtedly of considerable importance for the complete understanding of the complex behaviour of the human being.

### THE PRODUCTS OF DEVELOPMENT

In the process of development certain products come into being, which it is desirable that we should consider at the present stage, in order to comprehend the phenomena of social interaction, and the dynamic of personality functioning, to which we must pass in later chapters. Development involves not merely the passage of the individual from the lower to the higher levels, but at the same time the organizing and stabilizing of the various inner tendencies and forces through the operation of the various laws of development, and as a result of the coming into being of sentiments, habits, acquired interests and appetites. These



latter may be called the products of development. But they are not merely products; they are also conditions of, and factors in, development.

When once a feeling or emotion has been experienced in connection with any specific object, that object tends to become henceforward tinged with a certain new emotional colouring. It has acquired a new meaning—a secondary meaning. If the emotion in question is violent, and especially if it is painful, a condition may be established even at the perceptual level, in which the emotion radiates, as it were, to other experiences contiguous temporally or spatially, and a condition of emotional instability arises with respect to a group of connected or associated objects or experiences. “Emotional instability” is a somewhat unfortunate term to be compelled to use. For, under normal conditions, the effect on the mental life as a whole may be stabilizing rather than the reverse. What is really meant is that the emotional equilibrium of the individual, if we may so speak, becomes unstable with reference to any one of the group of objects or experiences in question. A new and possibly powerful energetic focus is established. The previous “indifferent” equilibrium is disturbed in order to introduce a new and dynamic equilibrium.

If the term “emotional complex” is to be employed at all in psychology, it ought to be employed in this connection. A “complex” would then be such a group of associated objects or experiences with the attached “affect.” It need not involve abnormal phenomena so long as the perceptual level alone is in question, though the intrusion of its emotional disturbance into higher levels must in general be regarded as of the abnormal, and possibly even pathological, order. As a matter of fact, the term “complex” is generally used in a narrower sense of repressed elements to which a painful “affect” attaches because of unresolved “conflict” arising from the evoking simultaneously of two

powerful antagonistic tendencies and emotions by the same object. Such phenomena might be regarded as special cases and marked by the term "repressed complex." The emotional disturbance on the purely perceptual level, associated with a "complex," would of course involve the disrupting influence of all emotion, but at the same time it would imply the existence, as we have seen, of a definite energetic centre, so far as the individual was concerned, with a tendency for the mental life to assume such organization as it was capable of around this centre.

With the emergence of the ideational level the "complex" may pass normally into the "sentiment." The sentiment has in recent years given rise to a good deal of needless controversy. According to the older usage sentiment was regarded somewhat vaguely and indefinitely as of the nature of an emotion of great complexity and relatively low intensity. Shand, however, first pointed out that the usually recognized sentiments must not be confused with the feelings they determine, being phenomena of a different order altogether, and suggested that the term "sentiment" should be specialized in psychology for mental systems—preferably dispositions—involving the association of an emotion, or several emotions, with an object. The suggestion, apart from certain modifications and qualifications which are relatively unimportant, has commended itself to psychologists generally. Morton Prince defines a sentiment as "an idea linked with an instinct."<sup>1</sup> This is possibly an over-simplification, but there would be very general agreement among psychologists with the view that a sentiment is a disposition, not an experience, and that it involves the association of emotional tendencies—or an emotional tendency—with an idea or system of ideas.<sup>2</sup>

<sup>1</sup> *The Unconscious*, p. 449.

<sup>2</sup> McDougall holds that the ideational level is not essential, but he would probably grant that most human sentiments at least are as described. The

This would apparently imply that the sentiment is merely a special case of the emotional complex—the emotional complex with the higher organization of the ideational level. This seems quite satisfactory. We say “higher organization” advisedly, because this would seem to be an important aspect of the phenomenon which has been too often neglected. Sentiments do not exist and function in isolation. Analytical psychology has much to answer for in the way of giving a false impression of concrete psychical processes, and the fact is particularly well exemplified in the present case. The rise of ideational consciousness makes possible the development, not of one, but of many sentiments. In the case of the human being, at least, these sentiments are complexly related to one another, and always form some sort of hierarchy with a dominant or master sentiment. McDougall has called attention to this fact, but he has not sufficiently investigated the conditions under which the hierarchy is established. The mere predominance of some one sentiment will not yield a hierarchy. The only possible way of accounting for a hierarchy is by showing how all the sentiments can be caught up into a larger comprehensive system. The development of the Self in relation to other Selves, and through interaction with other Selves, and the rise of a self sentiment is the one indispensable condition. As a separate and distinguishable entity, the self sentiment may be far from prominent, since the idea of Self may be anything but clear and definite. Nevertheless, as a unifying principle the influence of the self sentiment is all-pervading, and such hierarchy as exists may be said to exist in the self sentiment, into which all the other sentiments are necessarily swept up. The self sentiment, therefore, is not merely a sentiment among sentiments; it is a synthesis of all the sentiments.

Several important psychological considerations are in-

general meaning suggested for “complex” would perhaps meet his difficulty, and leave “sentiment” for the more special phenomenon.



volved, which we cannot at present stay to discuss. It is obvious that there is in psychical life a co-ordinating factor, which becomes clearly manifest at the higher levels, where it has been identified with Reason. But this co-ordinating factor is found at all levels. Reason is not a new force entering mental life from without at the higher levels. At the lowest levels the life and behaviour of the organism is co-ordinated, but the co-ordinating factor is not conscious of itself. When the ideational level emerges, however, the possibility of a conscious co-ordinating factor is present, as we have indicated. These statements may seem somewhat dogmatic, and unfortunately we have not the space at our disposal for the detailed discussion of the phenomena involved. At this point our conclusions really follow from the psychology of the process by which the idea of Self is developed, and the self sentiment comes into being.

What we are immediately concerned with here is the effect on development generally of the self sentiment with its hierarchy of sentiments, and the phenomena which are involved from the development or educational point of view. In the rise to the ideational level the perceptual level is not superseded. A higher level of synthesis and control is merely added. But it may well happen that certain constituent elements of the mentality of the perceptual level may be incapable of entering into the higher synthesis at all. The higher organization is selective. Certain modes of thought, interests, and trends of the perceptual level must be rejected, denied, "repressed" at the higher level. However extensively sublimation may have taken place, this is more or less inevitable. Some elements cannot but be "repressed" as out of keeping with any possible ideational Self, and with them some "psychic energy." If this energy is sufficient to involve serious conflict in the repression—that is, if the denied "wishes" are powerful and insistent—pathological "complexes" will inevitably tend to be



created. If not, repressed "complexes" will no doubt exist, but they will be relatively innocuous, and, save in dreams and occasional phantasies, their influence on conscious life will be slight.

We would protest against the view, which has been encouraged by Freudian writers especially, that civilized man is so far removed from natural man, that his hold on normality of development is in the last degree precarious. Given a fair chance the normal child can become a normal civilized adult. After all, civilization is itself a product of human nature. But the child must be given a fair chance—avoidance of needless emotional stimulation and conflict, an environment allowing free scope for sublimation, absence of hasty and arbitrary checking the child in the solving of his own problems of thought or of behaviour, or removing the problems by solving them for him. In a subsequent chapter we shall require to return to this topic.

At the highest level the products of development are ideals and principles of conduct, within limits rationally accepted and rationally held, synthesized as constituent parts of an ideal Self. Normality at this level will be secured on conditions analogous to those holding at the ideational level. Without normality at the ideational level, normality at the rational level is of course impossible. But in all cases there will be some sentiments, which from the nature of things cannot become ideals or principles. So far as they are recognized and accepted for what they are, we have all that can be expected in the way of development. Necessarily, however, such sentiments involve energy which is lost to the higher organization, and conflicts also are not unknown, nor are they unimportant, at this higher level.

Janet has suggested<sup>1</sup> that in all development on the affective side such as we have described, a condition which

<sup>1</sup> See *Les Obsessions et la Psychasthénie*, p. 39, and *passim*, *L'état Mental des Hystériques*, p. 539, and *Brit. Journ. of Psych., Med. Sect.*, vol. I., pt. 2.

he designates "tension" is involved, and Freud has developed his conception of the "endopsychic censorship" with an eye to the same or similar facts. The facts, regarded from the point of view of normal psychology, appear to be : (1) that the development of a sentiment necessarily involves a controlling and inhibiting influence on all tendencies evoked in relation to the same object or objects, and that without conscious processes being necessarily involved—we have already cited such phenomena in illustration of endopsychic process—and (2) that organization of sentiments within a larger sentiment like the self sentiment, or of ideals within a larger ideal, will involve something that may not inappropriately be termed "psychic tension," something which is again of the endopsychic order.

Our discussion has dealt with sentiments, but the results, except with respect to the emotional phenomena, are applicable also to acquired interests. The interest is the genus of which the sentiment is a species, though the self sentiment may be said to represent an organization of the interests of the Self, as well as the sentiments. The development and organization of acquired interests might be regarded as summarizing the aim of education, and at the same time describing the process. From the dynamic point of view, the organization of interests—and the same is true of sentiments and also of habits—is a veritable composition and summation of forces. May we not look to this for an explanation of many of the indubitable facts cited in support of the disciplinary conception of education, moral and intellectual alike ?

#### REFERENCES FOR FURTHER READING

1. JAMES : *Principles of Psychology*. Macmillan.
2. McDUGALL : *Social Psychology*. Methuen.
3. SHAND : *The Foundations of Character*. Macmillan.
4. FREUD : *The Interpretation of Dreams*. Allen and Unwin.
5. ADLER : *The Neurotic Constitution*. Kegan Paul.
6. WOODWORTH : *Psychology*. Methuen.

## CHAPTER VI

### THE RÔLE OF THE GENERAL TENDENCIES

It is one great defect of the new psychology of education, developing on a Freudian basis, that it takes little or no account of the rôle played by such general tendencies as imitation, sympathy, play, and the like, in the development of the child. That is perhaps a necessary result of founding too exclusively on the teaching of Freud, who has succeeded in explaining so much in terms of the "sex" instinct, that other natural tendencies of the human being, if they cannot be regarded as derivatives of that, must be considered as superfluous. The attitude is characteristically a doctrinaire attitude. In its application to education it cannot fail to be grossly misleading.

The general tendencies of the human being, sympathy, imitation, possibly suggestibility, play and experimentation, must necessarily play a very considerable part in his development through childhood and adolescence to maturity. Of course they do not play their part independently of, but rather in close co-operation with, the specific tendencies. The relation of the two groups of tendencies I have elsewhere<sup>1</sup> expressed in general terms by saying that the specific tendencies determine the ends, to which the general tendencies, as it were, attach themselves. It is quite certain that the course which development actually takes in any individual case is not explicable in terms of the specific tendencies alone, with or without the "mechanics" of Freudian psychology. In social interaction the "Reality

<sup>1</sup> See *Instinct in Man*.

Principle" in one important aspect becomes effective, and only through, and because of, the social tendencies like sympathy and imitation, while if play and experimentation have no other rôle, they at least serve to secure exercise of function.

Let us consider social interaction first. No man can live to himself alone. By nature and destiny the human being is a member of society, and it is only as a member of society that he can realize his own individuality completely. The gregarious tendency or instinct, as part of his original equipment, may be said to represent this truth in every human being, and to impress the fact—at least in one way—on his whole development and mental life. Careful study of the gregarious instinct itself shows that it is one of the crudest and most primitive of the tendencies which make up human nature. In some aspects, indeed, it is not far removed from the primitive appetites such as hunger and sex. As between one individual and another, its strength is very variable, but when it is strong solitude produces an "uneasiness" and a craving for company, that is quite analogous to the phenomena associated with the natural appetites. On the other hand, it must not be forgotten that the mere presence of a group or crowd of other individuals may evoke the instinct, independently of this "uneasiness" and craving, in which case it functions as a true reactive tendency.

Through the operation of the gregarious instinct itself the social environment may evidently exercise a profound influence on the development of the individual. Expulsion from society, or even denial of intellectual and emotional fellowship, may to some individuals constitute an experience so disagreeable as to be avoided at all hazards, even by the sacrifice, if necessary, of modes of thought and behaviour which yield them very considerable pleasure. Hence the gregarious instinct may often determine repression, may



yield a motive for sublimation, and may bring into existence complexes, both normal and pathological, as the Freudian psychologist would contend. But the essential and fundamental phenomena, as McDougall points out in his discussion of "active sympathy,"<sup>1</sup> are those involved in the controlling and modelling of an individual's behaviour so as to bring it into conformity with the recognized social standards.

Educationally, however, the most significant fact in connection with the gregarious instinct is that through its operation social life arises, and in social life an opportunity is afforded for that social interaction, through which the human being is socially developed and educated. In brief, the gregarious instinct creates the situation in which the profoundly important general tendencies, sympathy, imitation, and suggestibility, can become effective in the development of the human being.

### SYMPATHY

The general reactive tendency properly called "sympathy" has been well described by several psychologists, and notably by McDougall in recent times.<sup>2</sup> It is the tendency to experience the feelings and emotions of others immediately on perceiving the natural expressive signs of these feelings or emotions. McDougall has called this tendency "primitive passive" sympathy, in order to distinguish it from what he calls "active" sympathy, which is the tendency actively to seek the sympathetic reaction of other people to our feelings and emotions, which is, as we have just indicated, a common way in which the gregarious instinct manifests itself in the human being. In earlier times Adam Smith gave a very complete account of the phenomena of sympathy,<sup>3</sup> but he regarded it as a response following from our ideally putting ourselves in the place of those others

<sup>1</sup> *Social Psychology*, p. 168.

<sup>2</sup> *Op. cit.*, chap. IV.

<sup>3</sup> *Theory of Moral Sentiments*.

with whom we "sympathize." This interpretation is clearly wide of the mark. There can be no doubt whatever as to the direct and instinctive character of the process.

According to McDougall's view, "each of the principal instincts has a special perceptual inlet (or recipient afferent part) that is adapted to receive and to elaborate the sense-impressions made by the expressions of the same instinct in other animals of the same species—that, e.g., the fear-instinct has, besides others, a special perceptual inlet that renders it excitable by the sound of the cry of fear, the instinct of pugnacity a perceptual inlet that renders it excitable by the sound of the roar of anger."<sup>1</sup> The gain in concreteness by this way of speaking more than compensates for any slight sacrifice of accuracy. But the scope of the tendency is possibly wider even than McDougall allows, especially if he would confine its operation to the "primary" emotions. There are strong grounds for believing that *all* feelings and emotions may be sympathetically induced among gregarious animals. Still the fact of most significance, both biologically and educationally, is the fact to which McDougall calls attention, viz. the sympathetic induction of the "primary" emotions, and the calling into activity thereby of the important tendency-systems to which they belong.

A tendency has recently shown itself in psychological discussion in this country to assign the phenomena of social interaction to the operation of a hypothetical "herd" instinct, and to forego any attempt at further analysis. Such a tendency is to be strongly deprecated. Of course, sympathy and imitation manifest themselves only in the case of the gregarious animals, but that does not mean that they are necessarily manifestations of the gregarious instinct, and indeed the "herd" instinct, as ordinarily understood by the writers referred to, cannot be identified with our gregarious instinct. This wider "herd" instinct characterizes what is

<sup>1</sup> *Op. cit.*, p. 93.

little more than a recrudescence of the old faculty psychology, with the sole exception that in this newer faculty psychology we do deal with real inner forces, rather than mere inner events classified and the class names hypostatized. But the generalization, under which we classify all the impulses and tendencies characterizing group life, is no more to be considered as the producing cause of these impulses and tendencies, than memory of the individual acts of remembering. The same criticism applies, *mutatis mutandis*, to the "sex" instinct of the Freudians, who are indeed probably the worst sinners in this regard. Moreover such a way of speaking and thinking is apt to obscure the concrete fact, which is the behaviour of a living organism, not the mere mechanics of interacting mechanical systems. Further still, sympathy—and with it imitation and suggestibility—can in no way be regarded as a manifestation of the same instinct as creates the social group—the gregarious instinct, if that is how we interpret "herd" instinct—nor of any specific reactive tendency; it is not evoked by any specific situation or kind of situation, nor is the behaviour to which it leads in any sense specific.

The phenomena in which the general tendency, sympathy, manifests itself are very familiar. The expressive signs of any feeling or emotion in another person tend, as we have seen, to evoke the same feeling or emotion in us. In this fact we have an explanation of that subtle apprehension and understanding of another's feelings, which most of us have experienced. We apprehend and understand, not intellectually through our sensory experience of the expressive signs, but affectively by ourselves experiencing the feelings and emotions, and we may apprehend and understand in this way, when the expressive signs are themselves undiscriminated in our personal consciousness. This really means that we have intuitive, and not inferential, "knowledge" of the emotions of other people.



The educational significance of this tendency is so obvious that it scarcely requires to be dwelt upon. Through sympathetic induction the child's feelings and emotions may be stirred independently of the perceptual situations and experiences in connection with which such feelings and emotions normally arise. There are two important cases in which Thorndike questions the fact—that of “pugnacity-anger” and that of “parental instinct—tender emotion.”<sup>1</sup> But the appeal to the actual phenomena seems to go decidedly against him. It is beyond doubt that both actor and orator rely on the operation of the tendency to produce their effects in the case of anger and “tender emotion” alike.

Sympathy undoubtedly plays a vastly important part in the child's emotional development. The details will vary in individual cases, but the general lines of the part are fairly constant. In the first place, the child comes to understand himself and other people through sympathy, by very much the same process as Baldwin has described with reference to imitation<sup>2</sup>—which we will consider presently—but in a much more subtle and intimate way. In the second place, through sympathy the child becomes assimilated in his emotional reactions to the social *milieu*. So fundamental is the operation of sympathy in this way, that we may often in error credit the child with definite instinctive responses to specific objects and situations, when as a matter of fact the responses have been sympathetically induced through contact with others. This is one of the reasons why it is so difficult to determine decisively whether the human being congenitally reacts to certain specific objects with fear, disgust, etc., or not.

In fine, we must in sympathy recognize one of the most profoundly significant of the agencies, by which the individuality of the human being is shaped, more particularly in its inner affective aspects, and shaped independently of voluntary

<sup>1</sup> *Briefer Course*, pp. 45-8.

<sup>2</sup> See *Mental Development in the Child and the Race*.



effort—it may be in spite of voluntary effort—on the part of parent or teacher. The parent or teacher's emotional attitudes, his interests, his enthusiasms, may mean a great deal more for the development of the children under his charge, than anything he deliberately tries to do to educate them, and the effect is produced for the most part by what the teacher really is in his own inner nature, rather than by what he pretends to be. The influence of course may take either of two directions—for good or for evil. It is practically certain that the neurotic teacher will tend to turn out neurotic children, just as the emotionally well-balanced teacher will tend to turn out emotionally well-balanced children.

### IMITATION

A great deal of attention has been devoted to the general reactive tendency, usually designated "imitation" by most writers on social and educational psychology. Thorndike, indeed, denies that there is any innate tendency that can rightly be described as "general imitativeness," but it is by no means easy to understand what it is exactly that he means to deny. So much of our own learning is done by way of imitation, so much of the untutored teaching of parents, civilized and savage alike, is based on imitation, so much of the teaching and training of their young on the part of the lower animals rests on the same basis, that it is difficult to believe that Thorndike means to deny that there is an instinctive tendency to imitate, in the sense in which this has always been assumed. If he does, we cannot help regarding his view as an almost incredibly arbitrary distortion, and even flouting, of the facts, in order to support a theory which has not even simplicity to recommend it. Perhaps, however, his attitude is explained by, and is a reaction against, the much too wide signification given to imitation by writers like Tarde and Baldwin. It is true that the assigning of imitation as the

cause of all assimilation of the behaviour of one individual to the behaviour of another obscures the fact that the assimilation may have entirely different explanations in different cases, as Thorndike contends. True imitation, in the sense that an action in others functions as the direct stimulus to a similar action in us, is only one source of such assimilation.

McDougall has distinguished five different types of imitation,<sup>1</sup> but if we are to speak only of the reactive tendency uncomplicated, there are but two types—perceptual and ideational. We either imitate an act immediately on perception of the act, or we imitate an act later under the stimulus and guidance of the idea of the act. The deliberate copying of a model, either from interest in the thing itself, or interest in the results to be secured, undoubtedly implies the operation of factors other than the general reactive tendency to imitate. If we are to include this under imitation, we still have the two main types—deliberate and unconscious—with the two sub-types, perceptual and ideational, falling under both.

Perhaps deliberate imitation is, as Baldwin indicates, the really important type from the educational point of view. Whether we find in it, as he does, the germ of volition or not, we must acknowledge that it involves not merely a development of knowledge of self and of other selves, but also an organization of the self on the dynamic side, and a development, therefore, of real self-control in a positive sense. In deliberate imitation we apparently have the general reactive tendency attaching itself, as it were, to specific tendencies and interests, as the means for attaining the ends so determined, a phenomenon we shall meet again in considering play.

But unconscious imitation is also important. It is largely through unconscious imitation that the child picks up accent, gesture, idiom, manners, and mannerisms, and a great part of the general groundwork and texture of its ordinary behaviour. Specific tendencies and interests co-operate in the

<sup>1</sup> *Op. cit.*, p. 102.

result actually produced, as in the case of deliberate imitation, though perhaps not so prominently, as to enable us to trace with certainty the share of each in the completed pattern. It is largely through imitation, indeed, that compensation is made for the lack of definite inherited modes of reaction sufficient to meet the needs of life, such as we find among the lower animals, and within limits the more perfect the farther down the scale we go.

The relation of imitation, both deliberate and unconscious, but especially the former, to the negative self tendency is worthy of special notice. The negative self tendency is evoked by the apprehension of superiority in others. Some psychoanalysts, notably Adler,<sup>1</sup> seem to regard the feeling of inferiority as necessarily and essentially disagreeable. This is not in accordance with facts, though it is certain that an "inferiority complex"—in the pathological sense—is a very frequent phenomenon. How this comes to pass is probably to be explained from the close relationship that subsists between the two self tendencies, positive and negative, and the fact that the baulking of the positive tendency may evoke negative self-feeling as a "sorrow" emotion. Nevertheless, apart from the baulking of the positive self tendency, the feeling of inferiority involved in the recognition of superiority in others may have nothing whatever of the "sorrow" element about it. Under these circumstances, the recognition of the superiority of others simply tends to put us in a receptive and imitative attitude, provided the superiority is not so great as to inhibit all attempt at imitation. Such imitation might of course from another point of view be regarded as motivated by the positive self tendency in us, and especially so when anything akin to rivalry develops. In any case the net result is that the child tends to imitate his superiors with great facility in practically every direction, and older children in preference to grown-ups.

<sup>1</sup> See *The Neurotic Constitution*.

There are many exceptions, but most of them are quite easily explained by the circumstances of the case, and the kind of imitation involved.

### SUGGESTIBILITY

The problem of suggestion is one of the most interesting, and at the same time difficult, of modern psychological problems. The main difficulties are two—the difficulty of determining the precise and essential nature of the psychological phenomena, and the difficulty of tracing the phenomena to their source. McDougall defines suggestion as “a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance.”<sup>1</sup> Rivers, on the other hand, would rather use the word “as a comprehensive term for the whole process whereby one mind acts upon another unwittingly,” that is “as a process or mechanism of instinct, rather than part of its content.”<sup>2</sup> This latter usage—and theory—is obviously akin to that of Coué and the new Nancy school. Baudouin, for example, would define suggestion as “the subconscious realization of an idea.”<sup>3</sup> In effect he accepts the definition of suggestion as “an idea that undergoes transformation into action,” but prefers to put it in the way indicated. Baudouin further points out that in hypnotic suggestion—which is to be taken as more or less typical—two phases can be distinguished: (1) “An idea, proposed or imposed by the operator, is accepted by the mind of the subject.” (2) “This idea undergoes transformation into an action, so that the object of the idea is realized.” But what is essential and characteristic is the second phase.

With respect to the source of the phenomena, there is the same variance. For McDougall “suggestibility” is a general innate tendency, to be classed with imitation and sympathy.

<sup>1</sup> *Social Psychology*, p. 97.      <sup>2</sup> *Instinct and the Unconscious*, p. 91.

<sup>3</sup> *Suggestion and Autosuggestion*, p. 26.



For Rivers "suggestion"—inclusive of sympathy and unconscious imitation—is a mechanism of the unconscious, constituting one aspect of the gregarious instinct.<sup>1</sup> For Baudouin, as for Rivers, "suggestion" is an activity of the unconscious, but it is not specially related to the gregarious instinct, what is essential in it being nothing more nor less than the tendency for an idea to realize itself spontaneously—general "ideoreflex process."

It is evident, therefore, that the situation requires clearing up. This can probably be done most effectively by starting from the conclusions reached by Baudouin. According to Baudouin's view there are two phases in the complete process of suggestion—the "acceptance" of an idea, and the "ideoreflex" by which the idea is realized. Now McDougall appears to maintain that the first phase is the essential and characteristic phase, while Baudouin holds that the second phase is, properly speaking, suggestion. Do not all ideas whatsoever, as concrete conscious processes, involve a tendency towards this "ideoreflex" activity? Watson<sup>2</sup> and behaviourists generally would maintain that they do, would in fact identify the idea with this "ideoreflex" activity.

The theoretical and practical importance of this point can hardly be over-estimated. In every concrete idea the organism is already behaving in response to a presented situation. By using the word "idea" we emphasize and isolate the cognitive aspect of the process. But the process as a whole is not pure cognition. The most purely intellectual idea it is possible to conceive represents an item or phase in behaviour, and it is only when we regard it in isolation that it is possible to think of it as purely cognitive. It is not necessary to adopt the extreme behaviourist point of view, and identify the idea with "implicit motor habits," to come to this conclusion. With the process in the concrete, "im-

<sup>1</sup> *Instinct and the Unconscious*, chap. XII.

<sup>2</sup> *Psychology from the Stand-point of a Behaviourist*.

plicit motor habits" are unquestionably bound up, and feeling elements as well. Hence, in the concrete, an idea always tends to realize itself in the appropriate action—the "ideoreflex" process. But we cannot recognize the "implicit motor habits" as more than the "mechanism" aspect of the organism's behaviour, on precisely the same psychological footing as tropisms, reflexes, and, in some respects, the Freudian mechanisms.

The phenomena have been admirably described and analysed, by Watson,<sup>1</sup> but from a point of view which is scarcely so fundamental as ours. His discussion of the "word as stimulus" lays bare the whole mechanism of the "ideoreflex" process emphasized by Baudouin. In most cases, he says, the word stimulus "arises in connection with the implicit processes" going on within, that is to say, in a train of thought. If the word is one expressing overt action, it immediately initiates the corresponding movements and the action takes place. If it is a word expressing, not overt action, but thought-attitude, the thought-attitude also is forthwith present, if only momentarily. Nor are motor elements absent even in the latter case. Word, idea, thought-attitude, all involve in the concrete, as phases of behaviour, motor process explicit or implicit, to use Watson's terms, and even when most implicit, not without explicit elements. But these are not all the phenomena. Else behaviour would always be of the kind we call impulsive—behaviour characterized by the fact that the individual is "immediately plunged into action by every stimulus." As there are words which represent also suspension or inhibition of action—words like "if," "only," "but," "still," "not"—so the realization of the ideas corresponding to these words involves in a similar way suspension or inhibition. Hence an analysis of language from Watson's point of view leads us inevitably to the recognition of the motor phenomena involved in thinking as a phase

<sup>1</sup> *Op. cit.*, p. 331.

of behaviour, and to the realization of the fact that an idea in the concrete is inseparable from the processes by which idea becomes act or attitude.

Our conclusion then is that what we call an idea already involves in the concrete processes which represent the initiation of action for its realization, and were it not for the "but" or "not" consciousness, all action would be of the impulsive order. The idea is simply a phase, or possibly it would be better to say "stage," of the active response of the organism to a situation, and it in itself involves the beginnings of the "ideoreflex" process. Hence, if "suggestion" is to mean anything at all, it cannot be identified with the "ideoreflex" process, which is universally present, but must rather be in some way related to the "but" or "not" consciousness, by means of which the "ideoreflex" process is suspended or inhibited. This would be tantamount to finding the essential character of suggestion in Baudouin's first phase, rather than his second, that is in the "acceptance," as McDougall contends.

But this "acceptance" is of a peculiar kind. It is acceptance, as McDougall says, without logical grounds for acceptance. Or it is acceptance instinctively determined, as Rivers holds, a phenomenon of the "unconscious." The real peculiarity of this acceptance is that it depends on the dissociation<sup>1</sup> of "but" and "not" factors. This is the respect in which it differs from the "acquiescence" involved in voluntary decision. Acquiescence may lead to dissociation, but acceptance in the case of suggestion involves dissociation at an earlier stage.

It remains to investigate the circumstances in which the dissociation takes place, which eventuates in that acceptance wherein the success of a suggestion consists. Rivers would place suggestion with "suppression," as "one of the processes of instinct."<sup>2</sup> Dissociation we recognize as a

<sup>1</sup> Note that "dissociation" is used by Rivers in a narrower sense than here.

<sup>2</sup> *Op. cit.*, p. 91.

fundamental process—instinctive if you will—and this would apparently cover the phenomena of both, the only difference being in the conditions under which the phenomena occur in the two cases. Rivers also, as we have seen, takes suggestion as characteristically associated with the gregarious instinct. Now dissociation may occur in association with any instinct. The question is whether the dissociation which involves the acceptance of a suggestion ought to be regarded as due to the operation of a general tendency, suggestibility, or as a phase of the activity of one or more specific tendencies. Good reasons can be adduced for either view. But, if we adopt the second, it is certain that we cannot legitimately confine suggestion to the gregarious instinct. There are numerous facts and phenomena which absolutely refuse to be interpreted on that basis.

There are so many recognized types of suggestion that it is difficult to bring them all under any single rubric. Apart from hypnotic suggestion, the most familiar types are those we call *prestige* and *mass* suggestion respectively. In the case of the former, suggestion becomes effective because of some recognized superiority in another person. Hence the negative self tendency, not the gregarious instinct, seems to be in question here. Even mass suggestion may be interpreted in the same way. It is one of the most characteristic elements in the "crowd effect," and we may interpret it as arising from the feeling of inferiority which the individual experiences in the face of the crowd. It is true that such an interpretation does not entirely satisfy the mind. It is more satisfactory to look on the feeling of inferiority as one factor involved, but to attribute some influence to the gregarious instinct as well. It is extremely doubtful, however, whether either or both of these tendencies can afford a sufficient explanation of all the facts of prestige and mass suggestion, so that, even in the case of these types, we should have to fall back on some such general reactive tendency as McDougall



supposes. But we must be careful to assume no more than the facts warrant us in assuming. The biological importance of such a tendency as McDougall's "suggestibility" to gregarious animals is unmistakable, which is all the more reason for going carefully. We are not entitled to say more than that the dissociation underlying the acceptance of a suggestion, in such cases as we are considering, is, as a matter of fact, brought about under circumstances which indicate as the simplest explanation the operation of a general reactive tendency, but the facts may be explained without assuming such a tendency, unless we identify it with the general tendency for dissociation to take place whenever any specific reactive tendency is evoked.

This caution is justified by the consideration of other types of suggestion. In hypnotic suggestion, suggestion dependent on the manner in which it is conveyed rather than on its source, and in auto-suggestion, we have apparently phenomena of an entirely different order from those involved in prestige and mass suggestion, except for the fact that the phenomena still depend on dissociation. If we are right in employing "suggestion" and "suggestibility" to cover these phenomena, it is quite certain that we cannot explain the facts by appealing to the gregarious instinct, with or without the negative self tendency, and it is very questionable whether we can do so by appealing to any general reactive tendency of the type of McDougall's "suggestibility."

The general position would seem to be that the phenomena of suggestion, including both dissociation and the "ideoreflex" process, are too universal in their range to be ascribed to any single instinctive tendency, specific or general. Nevertheless in social interaction, where the process of suggestion is particularly important from the development point of view, we may regard a general reactive tendency of suggestibility as participating in the causation of the phenomena, but this is largely conditioned by the operation of the gregarious

instinct or the negative self tendency, or both. Suggestibility in the wider sense will refer to a characteristic of an individual, either temporary or permanent, either congenital or acquired, a characteristic involving the tendency towards dissociation under certain circumstances.

The dissociation itself merits some little attention. We have described it as the dissociation of "but" and "not" factors. The dissociation may be extensive, but all that is necessary is that antagonistic "ideas" should be eliminated. There need not be dissociation from personal consciousness. Hence the phenomena are not, properly speaking, phenomena of the "unconscious" at this point. Thus the subject carrying out a post-hypnotic suggestion may be quite aware of what he is doing. The Self of the moment is identified with the act, and often rationalizes it. For example, if it is suggested that the subject should close a window, he may give as the reason for the act that he "feels a draught," or simply that the open window "annoys" him. In either case at the moment he regards the reason as quite sufficient and rational. In this aspect suggestion is not the "sub-conscious realization of an idea," as Baudouin maintains. It is rather the conscious acceptance of an idea, because reasons for non-acceptance are absent—dissociated. This identification of the Self with a suggested course of action or single act is important in view of the part which suggestion may thus come to play in the moulding of character. On the other hand, it must be remembered that the Self, as such, is not dynamically involved until after the event. The dissociation of antagonistic "ideas" results in impulsive action on the part of the individual, because the removal of suspension or inhibition causes the stimulus to "plunge the organism into action," without the intervention of the system of the Self being possible.

In this connection mention must be made of the "law of reversed effort." The law, so named by Baudouin, was

formulated by Coué in these terms : " When the will and the imagination are at war, the imagination invariably gains the day. In the conflict between the will and the imagination, the force of the imagination is in direct ratio to the square of the will." <sup>1</sup> That this law is highly significant for education is obvious. Whether it may properly be designated a law of suggestion in any strict sense is more doubtful, and it is also doubtful whether the law, as stated in that unqualified way, is true. In any case phenomena, closely related to those which Coué had in view, have long been known to the teacher. These are the phenomena associated with negative suggestions and prohibitions. Every teacher knows that there is no surer way of disseminating a spelling error, than by putting it on the blackboard, and specially calling the attention of the class to it, as something *not* to be written. So also with regard to prohibitions. Every "do not" is a new temptation to the prohibited act.

Can we not bring all these facts together, including those cited by Coué and Baudouin, under the general principle that, if the idea to be followed, in order to be clearly represented, must always be preceded by the clear representation of its opposite—that which is to be avoided—the action to be prevented will always tend to be realized? In any case the conflict is not so much between the will and the imagination, as between one imagination and another imagination which has got a start. Of course a mere "not" cannot function as a suspending or inhibiting idea, because it is not the idea of anything at all—anything positive, that is to say, through which alone suspension or inhibition could be effected. The practical deduction for the teacher is that he should as far as possible avoid prohibitions and negatives, where a bad habit is to be extirpated, whether in morals, manners, or orthography.

The facts in connection with suggestion and suggestibility

<sup>1</sup> Baudouin, *op. cit.*, p. 125.

which the teacher must keep in mind have been so often and so admirably described by various writers, that we need not do more than briefly summarize them.

(1) For educational purposes suggestibility is best defined as the tendency to accept uncritically, and act upon, ideas, opinions, and beliefs, conveyed or expressed in the words, attitudes, or acts of other people, and its discussion is most usefully restricted in the main to prestige and mass suggestion. Other types of suggestion are not without educational importance, but their significance is minor, incidental, and subsidiary.

(2) The opinions and beliefs of the child—and of most adults also—are largely determined by prestige and mass suggestion, rather than by reason. An individual's sentiments and interests also, so far as the cognitive or objective aspect is in question, are similarly determined. The most characteristic mark of a family, a school, or a social circle, is to be found in the intellectual and emotional attitudes developed in this way.

(3) Prestige may be personal, or it may be derived. That is to say, it may depend on personal characteristics, or on associated circumstances, it may be, of a merely temporary character. While the effects of the former tend to be more stable, more permanent, and more valuable, it is by no means certain that they are more widespread, or necessarily more powerful at any particular moment. The circumstances which give adventitious prestige—if we may so speak—vary with the individual subject, and with his stage or level of development.

(4) The effect of suggestion may be greatly modified by a favourable or unfavourable emotional state. There may be a favourable or unfavourable emotional attitude towards the person from whom the suggestion comes. Or there may be an emotional state at the moment, with which the suggestion, as it were, chimes in, or the reverse. In the latter



case "hetero-suggestion" may be strongly reinforced, or the reverse, by "auto-suggestion."

(5) The experimental study of suggestion—apart from the study of hypnotic phenomena—has yielded relatively little new knowledge. It has shown that there are great individual differences in suggestibility, that the younger a child is the more suggestible he is, as a general rule, and that one and the same individual may have very different degrees of suggestibility at different times, as a result of purely subjective conditions—mental state, state of health, etc. Most of these things we knew before.

### PLAY

So much has been written about play from the educational point of view in recent times, that there is little new to be said—little that is important, at all events. As a general reactive tendency its scope and significance are far wider than in relation to the phenomena of social interaction. Unlike the general tendencies we have just been considering, play has no necessary social reference, nor is it possible to regard all play phenomena as manifestations of the herd instinct. Nevertheless volumes could be written on the significance of play in the social development of the child. For of the games played by children a large proportion numerically, and by far the most important, are social games. Social interaction through imitation, sympathy, and suggestibility, takes place "in the play way" on so extensive a scale, that it is by no means out of place to discuss play when the main topic we are concerned with is social interaction, and we can rightly regard social development as one of the important educational purposes served by play.

The main educational function of play is practically identical

with the function assigned by Karl Groos<sup>1</sup> as its biological function and explanation. According to his well-known theory, which he designates the "exercise theory," modes of behaviour which are of service in adult life are developed and established in the play of the young. The development has really two aspects, a general and a special. On the one hand, the growth of sensory experience, the development of motor co-ordination and control, the development of psychical functions generally, are furthered through play activity. On the other hand many of the types of behaviour demanded in the attainment of special ends in after-life are learned, and in the learning a fuller consciousness and comprehension of these ends must necessarily be secured. The special ends in question are in the last resort determined by specific reactive tendencies, operating "in the play way," the position being best seen in hunting games and games of combat. Imitation operating with play gives us various domestic and social games, which prepare for the domestic and social activities of adult life. And so the story runs. Where no provision—or an incomplete provision—is made for the nervous arrangements and connections necessary in the attainment of biologically important ends, in the original equipment of the human being, a far more efficient provision may be made through play and imitation.

This biological function assigned by Groos is not the only biological function of play, nor is the educational function derived from it, though certainly the most important, the only function of play that has significance for the educator. Theorists have also assigned relaxation as a function of play, and rightly so. For play is continued on into adult life, and its function in adult life can hardly be to prepare for future activities. It has also been suggested that play has a cathartic

<sup>1</sup> See *The Play of Animals*, and *The Play of Man*. The theory associated with the name of Karl Groos and developed in these works was anticipated by some of the older psychologists, and notably Malebranche.

function,<sup>1</sup> that in play various primitive tendencies, which are out of harmony with modern civilized life, find their satisfaction and practical elimination. This can easily be interpreted in terms of Freudian "sublimation," as the relaxation function can be interpreted with reference to Freudian "repression." Interpreted in this light, both functions have undoubted educational significance, to which we must return after considering the psychological nature of play.

Psychologically play, in all its types and phases, is clearly distinguished from the serious activity we call work. The writer has discussed the matter at length elsewhere,<sup>2</sup> and at present the general points of this discussion need only be summarized. The fundamental distinction between the two kinds of activity appears to be, that in play the value and significance of the activity is found in the activity itself—it is an end in itself—whereas in work or serious activity, the value and significance of the activity are found in an end beyond the activity. This means that in play we enjoy the activity itself, and our primary end in playing is just this enjoyment. In work, on the other hand, however much we may enjoy the activity, our primary object is to attain a certain end, to produce a certain result, which is at once the motive and the explanation of our activity.

But it will be urged that in play we often strive to attain an end, that more frequently than not the mere activity itself does not satisfy us, at least when we have passed beyond the childhood stage. This is true, but a vital difference still remains. The end we seek in play is not an end belonging to the "real world" system of ends, nor does the value we attach to it belong to the "real world" system of values. Its value is a "make-believe" value, and its world a "make-believe" world.

What does this "make-believe" involve psychologically ?

<sup>1</sup> Stanley Hall and Carr.

<sup>2</sup> See *Instinct in Man*, chap. X.

We must return to the consideration of the chief phenomena again in dealing with imagination, but in the meantime it is sufficient to note that the "make-believe" rests on dissociation phenomena which are characteristic of play. Rivers has made out a strong case for his view that "suppression" is a process or mechanism of instinct.<sup>1</sup> As we have just seen, he would place suggestion with "suppression." His use of the term "suppression," in this reference at least, is practically identical with our use of the term "dissociation." We have also tried to show that dissociation—or "suppression"—is one of the essential factors in suggestion. Hence, while agreeing in the main with Rivers' view, we should not speak of "suppression" *and* suggestion as processes or mechanisms of instinct, but merely of dissociation or "suppression" as a mechanism of instinct. This mechanism is strikingly exemplified in the case of play. The world of play is a world detached. Natural impulses and instincts may operate in determining the ends, but all within the detached play world. In calling the attitude "make-believe" on the subjective side, it is not quite certain that we are allowing sufficient latitude, that "make-believe" in the ordinary sense is not a species of the wider genus "play attitude."

What is dissociated in the development of the play attitude it is by no means easy to say. Take two animals at "fighting" play. The fighting tendency is evoked and expresses itself in all the characteristic movements and sounds. But the animals are not really fighting. As McDougall has maintained,<sup>2</sup> there is some special differentiation of the fighting tendency, involving the dissociation of certain factors. We would suggest that the factors dissociated are the protopathic and autonomic factors constituting what is essential in the emotion of anger. This is only a suggestion which we cannot stay to discuss at present, but it is worth

<sup>1</sup> See *Instinct in Man*, chap. IV.

<sup>2</sup> *Social Psychology*, p. 112.



noting that it will afford an explanation of the fact that in play such emotions as are evoked always exhibit the "joy" polarity.

Groos works out an interesting parallel between the change from work to play and the phenomena of alternating or multiple personality. The individual at play is a different personality from the individual at work, because of the different reaction systems in operation, and the different modes of operation where the reaction systems are the same. In either case the difference is expressible in terms of dissociation. But there are two points in connection with this dissociation to which he has not called sufficient attention, and the consequence is an incomplete theory of play. These two points have already been alluded to. Owing to the fact that there is detachment through dissociation from the world of the real, that tension which is inseparable from the dominance of the "Reality Principle" is relaxed. This is the source and explanation of the recreation and refreshment which play affords adult or child, and yields us a hint as to one possible use of play in school.

This release from tension and from the dominance of the "Reality Principle" is associated with the disappearance of repression owing to the temporary elimination of repressing forces. The elimination of repressing forces through dissociation is again an elimination which in type is characteristic of play. The repressing forces eliminated are those involved in the need of keeping in adjustment with the claims and demands of real life, and they are eliminated in exact proportion as these claims and demands can be temporarily laid aside. What is in many respects a simpler and more primitive mental life results, in which primitive tendencies and modes of thought and feeling can reassert themselves in a much fuller and more complete way than under the conditions imposed by reality, but always, be it noted, *sub specie* play. Here is the source and explanation of the way in which play

may exercise a cathartic function, and at least one important aspect and element of its moral or ethical value.

The association of play with the development of the æsthetic is yet another point worthy of some consideration. The two can scarcely be identified with one another, but their close relationship is unquestionable. In order to understand that relationship we must first of all be clear as to the psychological nature of æsthetic feeling and emotion. These must not be regarded as new types of elementary affective experience. Æsthetic emotions do not differ from other emotions except as regards the mode in which they are elicited.

There are really three modes in which emotions may be elicited.

(1) They may be elicited directly by situations, which congenitally or as a result of experience are so determined as to elicit them. Under this head would also be included emotions elicited by a situation associated in some way with one directly emotional.

(2) Emotions may be elicited through sympathetic induction. Under this head would be included, not merely emotions induced through the apprehension in perceptual experience of the emotional expressions in another, but also emotions induced through the imaginative realization or ideal representation of another as experiencing the emotion and showing the emotional expression in question.

(3) Emotions may be elicited empathetically. Empathy is somewhat akin to sympathy, and the phenomena due to each have not always been distinguished. It means feeling ourselves into a situation, identifying ourselves with it, losing ourselves in it, so to speak, not by any intellectual process, but directly. All æsthetic emotions, strictly so called, belong here.

It is clear that our pleasure in a work of art, or our enjoyment of art, is not necessarily æsthetic. A work of art

may directly excite feelings, agreeable or disagreeable, in precisely the same way as they are excited by any situation, or may by association call up such feelings. Similarly feelings may be sympathetically induced, say by a picture, which are in no way different from the feelings sympathetically induced by the ideal representation or perceptual experience of the feelings in others.

The case of empathy is different. Feelings and emotions evoked through empathy—and practically all feelings and emotions would appear to be capable of being so evoked—are in a category more or less analogous to the play category. For one thing they have a value in themselves, akin to the value in the play activity. For another thing they involve an attitude—the æsthetic attitude—which is as characteristic as the play attitude, though different.

The empathy theory of the æsthetic, which owed its development to the German psychologist Lipps, has recently been subjected to considerable criticism from different points of view, and many of the criticisms would seem to be valid against some of the forms the theory had assumed. But sufficient care has not always been taken—and this is true of both defenders and critics—to distinguish between feelings involving only empathy, and feelings which are subsequently sympathetically induced. In any case, as with random play, the empathetically induced feeling is only, as it were, the elementary æsthetic. A leading British authority in experimental æsthetics has recently drawn attention to the importance of what he has called “æsthetic adaptation,” but which following the analogy of play we may call the “æsthetic attitude.” The main characteristic of this attitude is “its impersonal, or rather non-personal, character.” And he goes on to say : <sup>1</sup> “There is a fairly general agreement about this characteristic, although there is as yet no consensus

<sup>1</sup> Edward Bullough in *Brit. Journ. of Psych.*, vol. XII, p. 95.

on its accurate description or its full significance. Personally I incline to regard this as the most important and fundamental aspect of the æsthetic, as distinct from other, adaptation. Its main feature is a divorce from all directly practical needs and functions and from the personal relevance of the object : it is neither agreeable (as a personal affection), nor useful (as fulfilling a practical function), nor directly ethically valuable (as serving a socially sanctioned, remotely personal purpose). At the same time, our adaptation is not impersonal, in the sense of scientific impartiality or mere intellectual curiosity. It is rather a non-personal relation to an object ; its significance does not affect me in my everyday experience, yet it does not lose touch with either the emotional sphere or a generally human interest ; and, though the experience has a certain unreality, or, if you like, fictitiousness about it, it does not fail to obtain a full response of the personality to which it appeals."

This admirable description of the æsthetic attitude shows clearly, at one and the same time, its difference from and its kinship with the play attitude. We have dissociation again, and of the same type, but along different lines. In particular the non-personal character of the attitude is different, and, if we might suggest so, the dissociation of the protopathic and autonomic factors is practically absent. The general position would appear to be, that, while the play attitude is an easy approach or avenue to the æsthetic, it is not the only approach. From the play attitude to the æsthetic attitude is as definite a transition psychologically, as from play to "earnest." Nevertheless the avenue into the æsthetic by way of play is undoubtedly of great educational significance, and has also probably been of high significance historically in the development of the æsthetic. Many of the points dealt with in this section will come up for discussion again.



## REFERENCES FOR FURTHER READING

1. McDOUGALL: *Social Psychology*. Methuen.
2. THORNDIKE: *Educational Psychology, Briefer Course*. Columbia University Press.
3. BALDWIN: *Mental Development in the Child and the Race*. Macmillan.
4. BALDWIN: *Social and Ethical Interpretations*. Macmillan.
5. WATSON: *Psychology from the Standpoint of a Behaviourist*. Lippincott.
6. SIDIS: *Psychology of Suggestion*. Appleton.
7. BAUDOUIN: *Suggestion and Auto-suggestion*. Allen and Unwin.
8. RIVERS: *Instinct and the Unconscious*. Cambridge Univ. Press.
9. KARL GROOS: *The Play of Animals*. Heinemann.
10. KARL GROOS: *The Play of Man*. Heinemann.
11. DREVER: *Instinct in Man*. Cambridge University Press.
12. BULLOUGH: Articles in *British Journal of Psychology*, vols. II, III, V, XI, XII.

## CHAPTER VII

### THE DYNAMIC OF PERSONALITY

IN the preceding chapters we have considered in the main the mechanisms involved in the development of a self or personality. Were we to leave the matter so, there would be an obvious danger of conveying the impression that the self and its dynamic can be wholly expressed and explained in terms of these mechanisms, as the present-day Freudian psychologist seems to contend, and as the Associationist contended long ago. The fallacy of such a view soon becomes evident when we try to understand the higher mental processes and products on this basis—self-consciousness, volition, rational purpose. The truth is, we have, up to the present, neglected to take into account, except incidentally, the fact that the behaviour of an organism is not explicable in terms of the individual mechanisms, acting each for itself, that behaviour is unitary, the response of the organism as a whole. It is true that the overt actions of a living organism can be analysed into the activity of various gland and muscle systems, which may be regarded as the mechanisms involved. When, however, we look on the overt actions as the behaviour of the living organism, we can no longer regard them as merely the mechanical resultant of processes in mechanical systems. The case is in no way different when we turn to the psychical phase or aspect of behaviour. Here too we can analyse the whole complex process into the activity of various mechanisms—for all behaviour, in one aspect, albeit partial and abstract, may be so regarded. But the behaviour

of the organism as such is not the mechanical resultant of the activity of mechanical systems in the psychical any more than in the physical or physiological sphere. Various writers have tried to express this truth in various ways, as by calling the living organism an "entelechy," or by hypostatizing "Life" itself. For the psychologist, so long as he adheres to his purely psychological point of view, there is no escape in any such direction. For him there is only one course open, and that is to describe the facts as he finds them, but these facts include, not merely the functioning of the individual mechanical systems, but the emergence of new functions with the appearance of psychic organization, the synthesis of personality, and the dynamic of selfhood, leaving the ultimate explanation to the philosopher. The one certain fact which the psychologist can contribute to the solution of the problem is that the phenomena of personal behaviour, and of the personal inner life, cannot be derived from the functioning of mechanisms, either physiological like the autonomic system, biological like instinct, intellectual like the Herbartian apperception-mas, or pathological like the "complex," "formation," or "mechanism" of the psychoanalyst.

### COMPLEXES AND THE SELF

We have already defined the "complex" both normal and pathological or repressed. As a factor determining behaviour it may be said to function, either through the Self, or independently of the Self. The difference must be very carefully noted, for it is an important one for education, both theoretically and practically. Upon our clear apprehension of this difference, and its significance, will depend, not only the extent to which we will allow Freudian psychology to modify our educational theory, but also the extent to which we will allow the findings of the psychoanalyst to influence our educational practice. Of course it goes without saying that the

work of Freud and his followers is of very great interest and importance for the teacher, and must necessarily exercise a very marked influence on his theory and practice. But the acknowledgment of this by no means commits us to a blind and unqualified acceptance of the "new education," which Freudian psychology and psychoanalysts would involve, were it to be regarded as furnishing a radical, complete, and adequate psychology of the human being.

Let us first consider the complexes as functioning through the Self. Psychologically the Self is a psychical organization. To begin with we may even call it a complex with other complexes. But, as we have just indicated, a mechanics of complexes interacting with one another is quite inadequate to explain the behaviour, inner and outer, of the human being. The mere fact of consciousness is immensely significant when looked at in the proper light. Add self-consciousness, as in the human being, and we seem to have an integrating and unifying factor, which must necessarily alter the whole psychical situation. The presumption at any rate is that self-consciousness will make a difference. Can we conceive any arrangement more absurd than lights and finger-posts at all crossways in a labyrinth traversed only by sightless beings, or, if not sightless beings, beings who are at least compelled to go by the way they are going, and none other? Yet in effect that is the kind of arrangement which nature and evolution have produced in the case of the human being, interpreted exclusively according to Freudian psychology.

The interpretation of the unconscious after the model of the conscious, and the failure to distinguish clearly as to essential character between endopsychic and conscious process, would appear to be one of the root errors in Freudian psychology. So long as we are dealing simply with the mechanics of action and thought, as it were abstracted from the unified conscious living organism that acts and thinks, the Freudian interpretation seems plausible enough. But as soon as we



envisage the whole fact, and try to construct the whole out of the mechanisms we have investigated, we promptly encounter difficulties of the most formidable kind, unless indeed we are disposed to throw a cloak over our heads, and to rush on declaring that we do not see the difficulties. The difficulties, one and all, arise from the fact that the Freudian psychology leaves no room for any function that may be assigned to consciousness as such.

What amounts to the same criticism may be passed on an extreme behaviourism. As a psychologist Watson rightly protests against the assumption "if not overtly, at least covertly" of "a nucleus, core, or essence which resists analysis," in order to account for "self and personality."<sup>1</sup> But is it not equally unscientific and equally unpsychological to demand in the same breath, that everything must be set aside "which cannot be expressed in the plain facts of hereditary reactions and their integrations," meaning what he does by "reactions" and "integrations"? What if we find the central factor, the nucleus or core, laid bare by our examination of hereditary reactions, but also, that without going beyond the facts to which Watson would restrict psychological inquiry, it is impossible to recognize that it is, or why it is, the central factor?

Even if we consider the Self as represented, to begin with, simply by a complex among other complexes, it must be regarded as occupying, as it were, a privileged position. The instinctive tendencies and primary emotions involved are the self tendencies and the self feelings, positive and negative, and these may be said to imply in a peculiar sense a setting of the organism as a whole. Normally these tendencies and feelings—and therefore the complex—depend on the relation of the individual to other individuals of the same species. It is certain, however, that at a higher stage of development, when a clear idea of the Self is present, the complex may

<sup>1</sup> *Psychology from the Standpoint of a Behaviourist*, p. 396.

be active in circumstances where this relation to others is not in question at all, and it is probable that this may be the case when even the vaguest idea of Self is present. However that may be, it is not legitimate to derive the self-complex, and the later self-sentiment wholly from the relation to others, and to speak as if it were constituted by the bare relation—a relation then without related terms. The Self of the self-complex must be regarded from the start as a psychological entity, the nucleus of personality which the psychologist is seeking.

It might of course be objected that we are not entitled to speak of a *self* complex until the ideational level is reached and an idea of Self is possible. But seeing that we speak of self tendencies and of self feelings below that level, we may also let self complex pass. In any case, whether we may call it a Self or not, there is some kind of psychological entity. When the ideational level is reached the normal self complex becomes the self sentiment. Fundamentally the self sentiment is a psychical structure, representing the original structure or structures, through which the primitive self tendency or tendencies manifested themselves, with such conserved modifications and connections as have been brought about by experience. In this aspect it is merely an organic structure like other organic structures. On the other hand its activity now involves an integrating factor, as we have seen, of the utmost significance—the *idea* of Self. It ought not to be necessary at this stage to point out that it is only when it functions in conscious process that any sentiment can be described as an idea associated with emotional tendencies. The emotional idea is function, not structure.

The most important point about the idea of Self is its integrative value or function. In enumerating the characteristics of conscious process, James points out<sup>1</sup> that every experience is “owned” by some individual. He seems to

<sup>1</sup> *Principles*, vol. I, p. 236.

have had in view, in part at least, the character to which we are now drawing attention. Every experience I have, every thought I think, every act I perform, may be apprehended as *my* experience, thought, or act. We may go farther and say, that in certain circumstances it will be normally so apprehended. The circumstances will be simply those which, congenitally or as a result of experience, evoke the self tendencies. But every experience, thought, or act, apart from those arising from the activity of the self tendencies themselves, involves the activity of some other disposition or dispositions, tendencies, or complexes. Hence normally in social situations the activity of any complex, other than the self complex, may involve the activity also of the self complex. In the light of this fact it is easy to understand Adler's contention that an "inferiority complex" is more potent in the determination of the phenomena of human behaviour, normal as well as abnormal, than the sexuality upon which Freud relies.<sup>1</sup> So too we can readily understand how Trotter can maintain<sup>2</sup> that it is the gregarious, or herd, instinct, that introduces conflict into the emotional life, if we look on the self tendencies as manifestations of the herd instinct.

One can safely say, therefore, that in the mental life of the individual human being, we rarely have to do with the activity of a single complex, any more than in the overt behaviour we have to do with the activity of a single reflex mechanism. Further the controlling factor under normal conditions is the *Self* of the moment. The part played by any single complex in the determination and constitution of this Self will vary as a matter of course, but the important thing is that the mental life and behaviour will be the mental life and behaviour of a conscious Self, not the quasi-mechanical activity of an aggregation of complexes, or a single complex.

What is the practical outcome of these theoretical, and

<sup>1</sup> *The Neurotic Constitution*, etc. <sup>2</sup> *The Instincts of the Herd*, p. 48.

possibly somewhat abstruse considerations? The general principle is that the activity of a complex may be restrained and controlled without the repression of the complex—that is, Freudian “repression.” The fact that the line of action prompted by a “wish” is not accepted does not necessarily imply the creation of a repressed complex. The conditions requisite for the achieving of this result, that a complex may be controlled and restrained, rather than repressed, are of some educational importance. The first main condition is that the Self should be stably organized on a sufficiently broad basis. The second main condition is the recognition by this stably organized Self of the existence of the complex in question, and its relation to the Self, which implies the entering of the complex into the organization as a recognized part. The third main condition is that the emotional discharge should be at no time so violent as to materially impair, through dissociation, this normal control.

As far as school life is concerned, the first and the third are probably the most significant conditions. The school life itself must afford scope for the development of a broad-based and stable Self. This is perhaps the most important condition of all, and that in respect of which the school most frequently falls short. A narrow life, with narrow motives, and a narrow outlook, will inevitably tend to develop a narrow, if not an unstable personality. An artificial life, with artificial motives, remote from the life and motives of the real world outside, will make the instability a practical certainty more particularly for those children—and they are usually regarded as the very flower and fruitage of the school—who enter most fully into that life, and are to the greatest extent dominated by those motives. School life—and home life too—must also afford opportunity for the functioning of this organized Self, and above all assaults on its stability by distrust, implicit or explicit, must be avoided.

The third condition possibly refers more to the home than



the school life. If emotional complexes are to be controlled and restrained, the emotions themselves must be amenable to control and restraint from within. The more frequently violent emotional outbursts are evoked, the more seriously is such an outcome endangered, for the more emotional an emotion is the less is it under control, and the law of development by stimulation indicates what the result is bound to be, when outbursts are a matter of everyday experience. Repression and coercion in the home, and, at the other extreme, over-indulgence, may make the situation highly critical, if not hopeless, before ever the child enters school.

Turn now for a moment to the functioning of complexes independently of the Self. By "independently of the Self" we mean outside the limits of recognition by the Self—in the unconscious in all degrees. The conditions under which such complexes will come into existence are conditions determining "repression," partial or total.<sup>1</sup> But we have already seen that "repression" does not eliminate the complex. Its activity must still be taken into account as a possible determinant of behaviour. So far, however, as the complex is a repressed complex it cannot determine behaviour directly. Hence we must consider the different ways in which it may affect behaviour indirectly. At this point psychoanalysts have done no small service to psychology by the currency they have given to certain terms, which enable us to classify more or less systematically the main types of indirect complex manifestation. Such are terms like "reaction formation," "compromise formation," "defence mechanism," "compensation mechanism," "projection," "rationalization," and the like, of which the ordinary psychologist may gratefully avail himself.

<sup>1</sup> It is difficult to avoid feeling with Rivers that the psychoanalytic use of the word "repression" is unfortunate and misleading. It is certain that much that is repressed in the ordinary sense of the word is by no means unconscious. It is doubtful whether very much is in the case of the normal individual, and in abnormal cases probably less than the psychoanalysts suggest.

When a complex, involving a "wish" that conflicts with a strongly established tendency or principle, is repressed, the repression very frequently involves what might be described as a backstroke in the opposite direction. The result is an exaggerated and more or less irrational tendency to act in a way contrary to that to which the repressed "wish" impels. Bernard Hart illustrates the phenomenon by the man "who had been addicted in his boyhood to the thieving of small sums of money," and in later life developed an exaggerated honesty, so that "he would devote endless time and trouble to the payment of some trifling excess fare, and an undischarged debt was a source of unceasing worry and self-reproach."<sup>1</sup> This illustrates admirably, not merely the phenomenon itself, in its simple form arising out of some definite repression that has taken place but also the continued activity of the repressed "wish," with the persistence therefore of the exaggerated and irrational behaviour in the opposite sense, both of which are characteristic of the "reaction formation," as it has been fitly termed.

It should be noted that the direction which emotion and action take under the influence of a "reaction formation" is by no means constantly and regularly the exact reverse of that which would be taken under the influence of the "wish" repressed. In actual fact there are all gradations between the pure "reaction formation" and the pure "compromise formation," where the repressed "wish" evades the repressing forces and finds satisfaction by a compromise or substitution in a line of activity that does not involve conflict with the opposing tendency or tendencies. In the latter case, as in the case of the "reaction formation," the phenomena involved may be unconscious in varying degrees. Repressed complexes inevitably give rise either to "reaction formations," or "compromise formations," or both. This we must recognize as a constant phase or type of endopsychic process.

<sup>1</sup> *Psychology of Insanity*, p. 107.

In addition to these "formations," which represent permanent, relatively complex modifications of the mental structure, we must also recognize the functioning of "mechanisms," of a more immediate and simple character—at least in the first instance—which secure a certain measure of protection against the disagreeableness of present experience. These mechanisms are of two main types, already alluded to, known as "defence" or "compensation mechanisms," according to the aspect of their function which is predominant. If the situations calling forth the activity of such "mechanisms" are constantly recurring situations, then, in accordance with the law of habit, they will become like the "formations" more or less permanent characteristics of the individual. The "defence" or "compensation mechanism" is by no means a purely psychological phenomenon, but a phenomenon of all organic life, on the physiological, as on the psychological, plane. Illustrations could easily be multiplied, but one illustration will suffice to make the nature of the phenomena clear. Here is one from Bernard Hart once more.<sup>1</sup> An individual, let us say, is particularly sensitive on some point, sensitive to a degree involving under certain circumstances a highly disagreeable experience. This topic "some one inadvertently introduces into a general conversation," when the individual in question is present, whereupon he "endeavours to conceal his perturbation by a rapid flow of remarks about some other thing, a phenomenon which may be described as a 'press of conversation.'"

In all these cases repressed complexes may be said to act in the determination of behaviour independently of the Self. There will probably be considerable difference of opinion as to the extent to which absolute independence of the Self is involved with the normal individual. But it seems impossible to deny that practical independence does seem sometimes to be involved. Psychoanalysts would, however, have us

<sup>1</sup> *Op. cit.*, p. 109.

believe that this is the typical condition. As we have already indicated, if this be so, it is impossible to assign any function to consciousness as a character of the processes which constitute our experience. But a very little reflection and self-examination will suffice to show that it is not so. In numerous instances, when we are frank with ourselves, we are led to confess that our "reaction formations" and our "defence mechanisms" more or less consciously determine behaviour, which, if not deliberate, is on the verge of being deliberate, and even where the behaviour is impulsive rather than deliberate, the impulse is by no means a wholly unconscious one—we know more or less what we are doing, and why. Even the processes of rationalization and projection, on which psychoanalysts have rightly laid great stress, afford further evidence in the same direction. These processes may be conscious processes unconsciously determined, but neither process is intelligible on the hypothesis, if it can be called such, that consciousness has no function to perform save to reveal the unconscious, or on the assumption that the unconscious determination is wholly *unconscious*.<sup>1</sup>

It appears, therefore, that the only conclusion we can arrive at is that, even when behaviour is determined by complexes independently of the Self, the independence is only relative, and in varying degrees, as far as the normal individual is concerned, in the great majority of cases, and these the most significant. The more readily we acknowledge the importance of repressed complexes, the more carefully must we scrutinize the actual phenomena of their operation. Facts must not be sacrificed to theories.

### PSYCHOANALYSIS AND THE SCHOOL

At this point it may not seem unreasonable to interpolate a section dealing specifically with psychoanalysis in its

<sup>1</sup> For further discussion of these formations and mechanisms see psycho-analytic literature.



relation to the school. Nothing is more certain than that any important advance in psychological knowledge, or radical change in psychological theory, must be of interest to the teacher, and may affect educational practice in the most fundamental way. For, of all those who are interested in the progress of psychology and the findings of the psychologist, the teacher may justly claim to be regarded as the most vitally concerned. Time was when "psychology for teachers" meant a psychology so much simplified, and so much selected, that it was with difficulty recognizable as psychological science. That time is past. The teacher now demands the best knowledge the psychologist can make available. Of course it is true that some psychological developments have no particular interest for the teacher as such, and do not touch on his work at all, or only to an infinitesimal extent. That fact does not alter the general position. The development known as psychoanalysis is not a development of this kind. The facts it has revealed, and the laws it has established, are not facts and laws to which the teacher can remain indifferent.

Psychoanalysis is both a theory and a practice. A definite estimation of the precise scientific value of psychoanalytic theory is by no means easy, and that for several reasons. In the first place, psychoanalysts differ widely among themselves with respect to fundamental issues. In the second place, the orthodox psychoanalysts—meaning by "orthodox" the followers of Freud—adopt an attitude towards the principles they recognize, which is religious rather than scientific, and the inevitable result is the stating of these principles in a way which does justice neither to the facts, upon which they are based, nor to the reasoning by which they were reached.<sup>1</sup>

<sup>1</sup> It is a grave misfortune for psychology at the present time that Freudians, especially in this country, adopt the thoroughly unscientific attitude they do adopt towards their theories and critics of these theories. It is as if psychoanalysis is in their case a complex. The only analogy one can think of is the attitude of the Christian Scientist towards Christian Science. If we interchange Freud for Mrs. Eddy, and psychoanalysis for Christian Science, we seem to have the exact situation.

In the third place, psychoanalysts generally take such liberties with psychological terminology, and not infrequently inconsistently with one another, and even with themselves, that adherents of what they rather contemptuously term "academic psychology"—whatever that may mean—often find it exceedingly hard to understand what their theories are, and wherein they differ from those views which are generally accepted. It seems, therefore, futile to attempt any further discussion of psychoanalytic theory as a systematic psychological theory. On the other hand, many of the facts to which psychoanalysts have called attention are of the very first importance for education, and an attempt has already been made to place these facts in their proper perspective. For the emphasis laid on these facts the "academic" psychologist is undoubtedly deeply indebted to Freud and his followers.

What is psychoanalysis in practice, and what is its object? The two questions may be taken in turn. In practice psychoanalysis is, in the main, the employment of a well-known method of experimental psychology, the method of free association, with or without special modifications in particular cases, to explore the tendencies, interests, and complexes of the person under investigation and treatment. The subject is required to allow his ideas to flow freely, without exercising any control, and without criticism, giving them to the analyst as they come. Theoretically a start may be made with practically any idea, but in practice a start is usually made from some part of a dream, which has been related by the subject, or from some word, which in a preliminary examination, say by Jung's Association Method, has shown indications of emotional associations.

The object of psychoanalysis is to trace out, and bring into consciousness those repressed "complexes" which, though "unconscious," are in various ways exercising an undesirable influence on conscious life and behaviour. Merely

bringing them into consciousness may remove the trouble, since it is at least in part due to the fact that, being "unconscious" they are beyond the control of the Self. If bringing them into consciousness is not sufficient to effect a cure, we have at least the advantage of knowing where the mischief lies, and may be able to take measures for "re-education" by "sublimation." In order that this object may be attained, it is essential that the subject should be wholly passive, and entirely uncritical, towards the ideas that come. This is the really difficult part of the analysis. In actual fact, unless the subject passes into a state more or less analogous to the hypnotic state, the analysis usually comes to a premature end, the necessary ideas failing to come. In such cases the subject says he can think of nothing else. This is an almost infallible sign that he is not taking a wholly passive attitude, and that the same forces which originally produced the "repression" are active in offering resistance to the coming to consciousness of some idea associated with the "complex."

What is the relation of psychoanalysis to the school? It can be said at once, that it is of the very first importance that every teacher—and every parent—should be familiar with the "theory" of psychoanalysis, and with the general conclusions of the psychoanalyst. There can be no doubt whatever that psychoanalysis throws a new light on many of the most difficult problems of the school. It is by no means a complete psychology, as so many of its advocates would seem to claim. That is to say, Freudian "theory" cannot account for all the phenomena of conscious life. But Freudian psychology does enable us to understand many things, which without it are quite inexplicable. From such understanding must needs arise a new attitude, the educational advantages of which it is difficult to overestimate. That is our first general conclusion with respect to the value of psychoanalysis for the teacher.



But perhaps it might be as well to descend to details, if only briefly. It is now almost a truism to say that the teacher's business is primarily to educate the child, not to teach this or that subject to the child. From this point of view there are three directions in which the findings of the psychoanalyst may be helpful. In the first place there is the understanding of the individual child as he comes into the teacher's hands. In the second place there is the treatment of the individual child so as to get the best educational results. In the third place there is the dealing with the exceptional act, or the exceptional child, at school—the problem of the difficult child.

If it is true that the teacher's main business is to educate the child, it is equally true that he must begin the process of education with each individual child as he comes to school, his capacities, his tendencies, his knowledge, in a word his personality. How is the teacher to know what and where this starting-point is? Only from the manifestations in the behaviour of the child. Hence he must be able to interpret these manifestations. Psychoanalysts maintain that the most important years in the formation of the child's character and personality are the years spent in the home, prior to the attainment of school age. Making every allowance for any exaggeration contained in their views, we are compelled by the most careful study of the facts to admit the substantial truth of this contention. Not only may the child's fundamental tastes, interests, and emotional attitudes be determined practically for life by his early experience in the home, but his modes of response to praise and blame, and to punishment, even his mental development as indicated by his Binet age, or in some analogous way, may be radically affected by complexes which have been formed in the home in his early years. Except on the basis of psychoanalytic "theory," the situation cannot be interpreted at all.

So also as regards the treatment of the child, in order



that the best educational results may be secured. The whole question of punishment, for example, must be reviewed in the light of our new psychological knowledge, and punishment is not the only case where the teacher is bound in the light of the facts revealed by the psychoanalyst to reconsider his position. Generally speaking, the requirements of the school life, and the demands of the teacher, should involve the minimum of repression, and the widest scope and opportunity for sublimation. Teachers have become weary of the continual harping on the fact that the personality of the teacher is the most important influence in the education of the child. After all, this is not the most fundamental fact. The fundamental fact is that education involves an interaction of personalities—the personality of the parent or teacher, and the personality of the child—and every thought, word, feeling, and act must be estimated according to its outcome, not merely in conscious life, but also in the “unconscious.”

The bearing of psychoanalysis on the treatment of the “difficult” child is too large a subject to enter upon at present. It is enough to say that in this case the “theory” of psychoanalysis is quite indispensable. The source of the “difficulty” is almost invariably in the “unconscious.” Without the knowledge which psychoanalysis has made available, the teacher must work in the dark; without some understanding of psychoanalytic “theory” no rational treatment is possible.

Our general conclusion so far is that, as regards the facts and findings of the psychoanalyst, there need be no hesitation in deciding that the teacher must know them. With respect to the practice of psychoanalysis the position is somewhat different. To say that the teacher must psychoanalyse the children under his care is sheer nonsense. The serious practice of psychoanalysis—like the practice of hypnotism—is entirely beyond the province of the teacher, and is a task for the

specialist—though we do not believe necessarily the medical specialist. Apart from any other objections, the teacher can never have time for this work. But this decision does not close the door against some practical employment of psychoanalytic methods on the part of the teacher. There may be differences of opinion about the matter, but there are strong grounds for holding that a preliminary and tentative examination of individual children by psychoanalytic methods would often be found helpful. Without some practice in analysis, and some opportunity to verify at least a few of the conclusions, psychoanalytic “theory” is apt to remain somewhat nebulous, and to obtain nothing more than lip service. With the ordinary child whose confidence has been won, such analysis need not be anything very formidable. The teacher would thereby be led to a better understanding, and possibly a wiser treatment of the child, while the need for serious psychoanalysis might be indicated. In all cases of “difficult” children, backward children, highly nervous children, the need for psychoanalysis must always be kept in mind as a possibility by no means remote.

One last point. The teacher who would verify the findings of psychoanalysis should try the method on himself. He can without great trouble analyse some of his own dreams, and submit himself at least to a preliminary examination by psychoanalytic methods, if he is unwilling to submit to a more radical psychoanalysis. Not only would he gain a fuller knowledge and understanding of Freudian psychology in this way, but he would also gain an insight into human nature, and in particular into his own human nature, his own “complexes,” formations, and mechanisms, which might conceivably be as helpful in his school work, as the results of a psychoanalytic examination of the children under his charge.

We cannot leave the subject without saying something about the place assigned to sex in Freudian theory. The Freudian “unconscious” consists for the most part of re-

pressed "wishes"—"wishes" which are inconsistent with the conditions of social and civilized life, and which are disagreeable or painful to the Self. Freud and his followers believe that these "wishes" are almost always sexual in their ultimate nature. Now, if we are determined to find the sexual, we will not seek in vain in almost anything that pertains to humanity. Freud of course interprets sexuality very widely, or rather he assumes sexual connections where few non-Freudian psychologists would agree that they exist. But at the same time, from the nature of things, the sexual is not unlikely to play a prominent part among repressed "wishes" owing to the prominent part it plays in human life as a whole, and the restraints placed upon it by the conditions of civilized life. It must not be thought that Freudian doctrines at this point are all theory.

### INTERESTS AND APPETITES

No word is more frequently used in educational discussions than the word "interest"—unless possibly the word "attention." And the relation of the psychological phenomena designated by the two words respectively to one another is a commonplace of educational thought. But the frequency with which we use the words is by no means to be taken as a measure and a guarantee of the adequacy of our comprehension of the phenomena in question. In actual fact the word "interest" is used in two quite distinct senses. As often as not we slip from one sense to the other without being clearly conscious of the transition, with results which cannot fail to be confusing, if not disastrous. "Interest" may refer to *experience* or to *disposition*, to the conscious or to the unconscious. As referring to experience, "interest" signifies the fundamental affective factor, which, as we have already seen, is always involved, and gives the experience what we call "meaning." "Feeling of value"

or "worthwhileness" probably expresses with sufficient clearness and concreteness this aspect of experience. When we speak of *an* interest, however, the reference is not to this affective aspect of experience, but to a structural feature of the mind itself, to a disposition. Baldwin and Stout have suggested that this distinction should be marked by attaching the qualifying words "experience" and "disposition" or "dispositional," in the respective cases,<sup>1</sup> and the course recommended might well be followed, whenever it is necessary to employ the word "interest" in its two senses in the same discussion. At present we are concerned solely with dispositional interest.

An interest is a disposition in its dynamic aspect. If it be thought too sweeping to call all dispositions interests, we may modify the statement by excluding those dispositions which underlie habits, on the one hand, and those which underlie appetites on the other. Though in strictness "interest" might be made to cover both, this limitation of its significance is not without value. Habit, on the one hand, in proportion as it is established as habit, loses its dynamic significance. Appetites, on the other hand, represent a quite special type of active disposition, and undoubtedly require to be marked off by the employment of a special term from those active dispositions which have opposite characters, while for the latter no term is so suitable as the term "interest" itself.

Let us first be clear as to the distinction between appetite and interest. Freudian psychology, as we have already seen, lays great stress on the distinction between the "Reality Principle," and the "Pleasure Principle." The distinction itself is a very important one, whatever opinion we may hold as to the use made of it in Freudian theory. It is a distinction that cuts very deep into the psychical conditions determining behaviour, and it is a distinction—it should

<sup>1</sup> Baldwin's *Dictionary of Philosophy and Psychology*, s.v. "Interest."



be carefully noted—which falls quite beyond the ken of the extreme behaviourist. It is by no means easy to express the distinction in simple and unambiguous terms. We have already agreed to call appetitive tendencies those tendencies which, as it were, spring out of agreeable or disagreeable experiences, and are directed simply towards the agreeable and away from the disagreeable. Thus the end of behaviour determined by appetite is the mere feeling state. But all conscious behaviour involves such a feeling state. Normally the function of this feeling state is merely regulative, in the case of the reactive tendencies at least. This function, however, may become submerged by the development of a determining, motivating function. In so far as this takes place an appetite has been established or acquired.

Theoretically we might regard the acquired appetite as a malignant mental growth, if the figure may be permitted, implying always disorder of function. Practically, however, this is far too extreme a view to take. Many acquired appetites are virtually harmless ; some may in their general effects be even beneficent. It is only when the balance between the “Pleasure Principle,” and the “Reality Principle” is seriously disturbed that the appetite growth becomes really malignant. On the other hand, it must also be kept in mind that the malignant character of an appetite growth may not immediately reveal itself. An acquired appetite for the sense pleasures associated with indulgence in alcohol or other drugs, or for the excitement involved in gambling or similar pursuit, is quite obviously malignant, when it has attained such predominance as to dwarf the motive forces which control the normal regulated life of the ordinary civilized man. When such a pass is reached, every one can recognize the pathological condition and its seriousness, including even the sufferers themselves. But there may be highly significant acquired appetites, whose influence

on behaviour is not so clearly manifest. In some cases the influence is as destructive as it is insidious; in other cases it is hampering, distorting, weakening, enervating, rather than destructive. If we might lay down a general principle, we should say that acquired appetites are actively malignant in proportion as they displace interests of the reactive order, and serious in proportion as these interests are normally important in the well-regulated life.

Some American critics of Freud and psychoanalysts generally have claimed that they too frequently confuse symptoms with causes. In some cases the criticism seems to be well founded. But the predominance of the "Pleasure Principle" over the "Reality Principle" is more than a symptom. It may be that as well, but it is also a cause; at the same time it is often the disorder itself.

Where Freudian psychology appears to be in error is in taking the "Pleasure Principle" to represent alone the primitive mental level. This view leads the Freudian to explain in terms of what he calls "regression," not merely serious functional mental disorders, but deviations from the normal too slight to be regarded as such. He maintains that an insatiate seeking of pleasure is the characteristic of the primitive level, and an individual only faces reality, because he is, as it were, compelled to do so, presumably in order to obtain some pleasure. "Regression" from this point of view may be described generally as turning away from reality to find pleasure on a lower, more primitive, level within. It is best exemplified in the individual, who, declining to face the realities of life, finds satisfaction in phantasies, which may involve reverting to childish experiences and pursuits. There can be no doubt that real "regression" of the kind described frequently takes place, more especially where the phenomena are distinctly pathological. But it is equally certain that there are many cases, where the explanation given by the Freudian is highly forced

and unsatisfactory, and the assumption of a primitive level with the "Pleasure Principle" predominant is of very questionable validity. Many of these difficulties vanish, when we interpret the facts from the point of view of acquired appetites. "Regression," or at least the suspension of progressive development, is a normal result, to be expected wherever feeling displaces the achieved result as the end of action.

Can any account be given of the mode in which acquired appetites are developed? That ought not to present any serious difficulty. Though the "Pleasure Principle" is not the sole principle characterizing the primitive mental level, it is nevertheless a characteristic of that, and all higher levels as well. In proportion to the frequency and intensity of the pleasure accompanying any form of activity, will be the strength of the tendency to repeat that activity. In the case of an entirely unprogressive mental life, the motives determining behaviour would probably become more and more of the appetite type. Moreover, it would seem as if all the primary emotions, no less than the sense feelings, were capable of determining the development of appetites. This seems to hold even of feelings which are, to begin with, disagreeable rather than the reverse, and in the first instance evoke aversion rather than appetition. The conditions determining such reversals are not as yet clearly understood, and the whole subject would repay investigation. But the facts are plain and important.

In view of the phenomena of acquired appetites the methods employed in the attempt to make school work interesting to the child must be carefully scrutinized. As the author has elsewhere pointed out, "the teacher who always tries to make school work interesting by effort, on his part, to attract the pupils to attend by means of story, illustration, picture, and, in short, all the tricks of the 'show lesson,' not merely develops mental 'flabbiness' in these pupils, but also

develops the 'appetite' for such lessons," an appetite which "fastens upon the pleasant, amusing, and enjoyable parts of the lesson, is impatient of everything not coming under these categories, and ends in a 'craving' for mere amusement, which becomes more and more fastidious and difficult to satisfy, and which is accompanied, on the intellectual side, by a greater and greater tendency towards passivity in the mere enjoyment of the experience."<sup>1</sup>

Interests of the reactive order differ from acquired appetites in the same way as reactive differ from appetitive instinctive tendencies. The behaviour determined by an interest does not originate and terminate in the mere agreeable or disagreeable feeling. Essentially the behaviour is activity with reference to an apprehended situation; the feeling involved—satisfaction, in so far as the end of the activity is attained, dissatisfaction, in so far as the activity is impeded or thwarted—is secondary and regulative, not primary and originitive.

Educationally the essential differences between the two types of mental structure may be summed up under two heads. In the first place, acquired appetities are from their nature practically unorganizable. They are in fact capable of entering into only the simplest and crudest types of mental organization, and tend in such degree as they develop in the malignant form—as that has already been described—to break down such higher organization as there is. A close analogue may be found in morbid anatomy, in the relation of growths, malignant or innocent, but especially the former, to surrounding bodily structures. Interests, on the other hand, may tend towards higher and more complex mental organization, and are never hostile to organization as such. In the second place, and largely as a result of their character as unorganizable, the acquired appetite is essentially unprogressive, even where it does not tend towards actual

<sup>1</sup> Cf. *Instinct in Man*, p. 256.



degeneration and decay, whereas the interest tends, in varying degrees according to the nature and comprehensiveness of the interest in question, towards development and progress.

All the structural elements of the Self, as an organized whole, are of the nature either of reactive interests or appetites. In particular cases the two types may be closely bound up with one another. Appetites are not necessarily harmful. They are only a possible source of danger, against which the educator must be on his guard. The best safeguard against any mischief that may come from this source is the avoidance, as far as possible, of appeal to the agreeable or disagreeable as motives, the cultivation of interests of a stable and comprehensive type, and the encouragement of the individual on every possible occasion in the working out of the necessary means for the realization of those ends of his own which have definite individual and social value, and in proportion as they have such value.

It is important to note that the organization of interests has special bearing upon what we call power, personal or intellectual, in an individual. It is not suggested that such power has not also a congenital basis, which would appear as a difference of capacity, rather than tendency. Apart, however, from differences of this sort between individuals, we find differences which manifest themselves in behaviour in phenomena of the same order. One individual may be markedly effective, another of even superior mental endowment ineffective, at a piece of work, because, as we say, the heart of the one is in the work, whereas the heart of the other is not. It is plain that the more completely the various inner forces of an individual are focused upon the attainment of a certain end, or the pursuing of a certain line of action, the more *power* will be manifested in that particular direction. This is precisely the effect which organization of interests produces. It may be exhibited on a large or a

small scale, according to the interests involved, and the degree of organization. But it is always an effect arising from the process we call education, and we shall require to take up its consideration again when we come to discuss mental discipline in a subsequent chapter.

### THE COMPLETE PERSONALITY AND VOLITION

In passing to the consideration of the complete personality as an integrated dynamic whole, it must be freely granted that the psychologist is as yet unable to penetrate the inner mystery of Life and Selfhood. He is in fact so far from being able to do so, that for the present he does not care to make the attempt. Life he accepts as a datum. That in actual fact Life means integration and organization he recognizes, but how or why is as much a mystery as Life itself. Whether to the mystery of Life must be added a new and further mystery, the mystery of Mind, he does not know. If the philosopher knows, the psychologist can only stand aside and let the philosopher speak. For the psychologist the starting-point, as we have repeated so often already, is the behaviour of the living organism, and he seeks merely to describe and explain the phenomena of behaviour, as concrete happening in an actual world, Life and the world being accepted as ultimate data.

In reading the famous Chapter X of James's *Principles* most readers are left with the uneasy feeling that in spite of its plausibility there is something unsatisfactory about James's discussion of the "pure Ego,"<sup>1</sup> and especially about the conclusion which professes to find the thinker in the passing thought. Sidis, following James, develops his theory of the "moment consciousness" to meet the difficulties raised by James's conclusions.<sup>2</sup> The difficulties

<sup>1</sup> Vol. I, p. 329.

<sup>2</sup> *Psychology of Suggestion*; or *Psychology, Normal and Abnormal*.

however, do not seem to be psychological difficulties at all, but rather philosophical, and the whole discussion similarly is not so much a psychological as a philosophical discussion. James starts from the Cartesian standpoint. Now whatever ultimate conclusions we may reach from a Cartesian starting-point, it must be remembered that the starting-point itself is not a psychological starting-point, nor are the conclusions psychological, if we take the science of psychology as it is understood at the present day. Thinking is a mode in which the living organism responds to situations—a phase of behaviour. Thinking without a thinker, who thinks, is as meaningless for the psychologist, as chemical reaction without reacting elements for the chemist. Not only so, but the psychologist's study of thinking in order to determine the nature of the thinker rests on the assumption that the thinker is not contained, but rather revealed, in the thinking. All this we have seen before. The passing thought, like every other item of behaviour, is determined by enduring conditions in the constitution of the thinker, conditions which are not contained in the thinking, as process or event.

The constitution of the thinker is the problem of personality as it presents itself to analytical psychology. The problem may be approached either from the subjective or from the objective side. This means that we can either study introspectively the factors by which our own inner life is determined, or we can examine objectively the behaviour of another and pass inferentially to the factors of which the external behaviour is the outcome—factors in either case being understood as inner factors, constituents of the organism itself. The writer many years ago came across a story—probably now out of print—entitled *I, Me, and Him*, the theme of which was the threefold personality of every individual, the person as he appears to himself (I), the person as he appears to others (Him), and the real personality (Me). The plot was woven round the substitution

of one for the other in the wrong situations, with the misunderstandings and confusions thus created. Much good psychology could obviously be worked into a story on such lines. But the psychological interest is in the relation of I and Him to Me, and to one another, rather than in the awkward situations that would arise from interchange. I may be taken as representing the subjective, Him as representing the objective aspect. Both will be incomplete and possibly somewhat distorted, but it is only in the two aspects that the real complete personality, the Me, can become known. Hence the I and the Him, the subjective and the objective aspect, must be regarded as in a sense complementary, and an analytical psychology of personality must avail itself of the results of a study of both.

Hence the problem of personality must not be confined to the problem of consciousness of Self. It is a fact that the person is conscious of himself as a person, and it is a very important fact from the point of view of the behaviour of the person. All the same the constitution of the personality is another and partly independent fact. The consciousness of Self implies a synthesis or integration at a high level. At the core of this synthesis, on the subjective side, is the whole mass of experiences, summed up under what we call common sensibility, together with the experience of activity in pursuit of ends and purposes. The criticism to which our experience of activity has been subjected has had one important result. It has enabled us to distinguish clearly between those elements in our experience of activity, which are sensational in character, and fall therefore more properly to be included under the head of common sensibility, and that character which belongs to conscious process as such, already marked by the word "conation." Over and above this central core there are percepts, memories, ideas, desires, purposes, and so on, constituting the Self at any particular moment, in virtue of the fact that they are apprehended as



such. But if the individual were to give a description of the elements of his own personality, the description would not be in terms of these experiences, but in terms of dispositional elements, so far as these were recognized as determining experience and external behaviour.

A description of the personality, in its subjective aspect, therefore, would be mainly in terms of habits, tendencies, interests, sentiments, ideals, but only so far as these were recognized as giving experiences their meaning, and as underlying external behaviour. Unless self-knowledge were complete, such a description would necessarily omit some elements in the personality, and possibly be somewhat distorted. But the elements mentioned would be recognized as certainly there. A description of the personality in its objective aspect, that is from the point of view of the external observer, would be in terms of the same type of elements. This description would doubtless specify elements not mentioned at all in the subjective description, and in some cases would be a real correction of the subjective description. An objective description, however, being reached by inference from observed behaviour, could never have the same certainty as regards detail. The external observer may find evidence of the presence of a complex; whether that complex is present as ideal, sentiment, or repressed complex, he is unable with certainty to say. The psychoanalyst, or the extreme behaviourist, might say it did not matter. But that would involve a total misinterpretation of the nature of the human being.

We can, then, by combining the accounts, subjective and objective, determine the dispositional elements present—and of course active—in the organized personality. For the manner in which they are present, and the details of the organization, we must rely on the subjective account. Personality studies on a purely behaviourist basis do not seem capable of carrying us very far, when we try to explain the

higher and more characteristic levels of human action. As we have seen, the position is the same with psychoanalytical theory. The broad features of personality can be expressed in the language of either; the phenomena of altered and multiple personality can be satisfactorily accounted for in terms of either; but the ideals, the purposes, the voluntary decisions of the person, are beyond the ken of both.

To make this clear let us turn to volition itself. Volition is essentially the organized self-conscious person in action. Corresponding to the intellectual levels we have called perceptual, ideational, and rational, there are the three levels on the active side marked by impulse, desire (and sentiment-determined action, for which we have no special term), and volition. In the case of the first, each tendency acts for itself—the state where the Freudian “wish” is dominant. The behaviour is of course the behaviour of the organism as a whole, but for the moment the single tendency has control of the organism, as its *psyche*, if we may so speak. In the case of the second, a system of tendencies, more or less comprehensive as the event may be, is at the helm. But in volition the act is the act of what we call the Will. What is the Will? The answer is that the Will is the organized Self in its dynamic aspect.

Psychologists have had great difficulty, and have exercised much ingenuity, in explaining how we will an act, and how, when we will an act, that act comes to be performed. McDougall<sup>1</sup> has given us an account which seems to meet satisfactorily all the difficulties, and to include what is essential for the explanation of all the phenomena.

First of all, volition involves the identification of a certain line of action with the Self. Stout has expressed this by saying that we believe “that so far as in us lies we are going to carry out a certain line of action.”<sup>2</sup> Perhaps this is not

<sup>1</sup> *Social Psychology*, chap. IX.

<sup>2</sup> *Manual of Psychology*, 3rd ed., p. 711.

too well expressed, since "intention" is more than "belief." But apart from this, it indicates sufficiently clearly the identification with the Self. The clause "so far as in us lies" is specially significant in this connection. To some extent it suggests the extreme case, where the line of action decided upon has to be carried against obstacles. Normally volition does not necessarily involve any struggle of this kind. The line of action decided upon follows as a matter of course. But the extreme case presents grave difficulties unless we see clearly that identification with the Self means that the forces organized within the Self, as a dynamic system, are now acting in this particular direction. In the ordinary volitions of everyday life "as far as in us lies" is generally qualified in some way or other, either explicitly or implicitly. If it is unqualified, then the volition has behind it the total power of the Self. It is only in terms of such phenomena that we can explain what is meant by "a strong will," "a weak will," a vacillating will," and so on.

Moreover these facts cast a new light on the nature of the determinism which characterizes human action. Psychology is bound to assume, as Freud maintains, complete determinism in the psychical as in the physical. An organized, self-conscious personality, however, is a factor to be taken into account. It is impossible here to expand this thesis. One illustrative case will show how far Freudian psychology falls short of realizing the true nature of the factors which must be assigned as determinants of human behaviour, inner and outer. The one we will choose as more or less typical is the case of what we call an "ideal."

We start with individual tendencies, each for itself, so to speak—the Freudian "wishes." Even at this level it would be an error to regard behaviour as mechanically determined. These individual tendencies have all a certain teleological character, which belongs to them all as *living*

tendencies. Consequently it is futile to expect that a purely mechanical explanation of the behaviour so determined will fit the facts. We may nevertheless grant that a *relatively* mechanical explanation will do so to a fairly close approximation, because the laws of the system are, *mutatis mutandis*, very similar to the laws according to which events occur in a physical system. These tendencies are at the next level organized in complexes and sentiments. Even thus it may often be useful to adhere to the mechanistic point of view in discussing them, though the presence of the idea in the case of the sentiment is a clear indication of the increasing importance of the non-mechanical aspect.

Take now the ideal. How is it related to the sentiment? It is the sentiment raised to the higher self-conscious, rational level. A sentiment, say, of love of justice—how developed it is not necessary here to inquire—becomes an ideal of justice, when the abstract idea of justice defines for the individual an end, which he consciously accepts for himself and identifies with the Self in the sense already explained. How is the ideal related to the existent world of external nature, the world of mechanism? Clearly it has no existence in that world at all. Yet it may profoundly modify the future of that world. In other words, as far as that world is concerned, it is creative. The Freudian psychologist may claim that he recognizes this creativeness as a characteristic of the “wish” from the outset, and that, this being so, everything else can be explained by his mechanisms. An ideal, however, as a creative factor, may bring into being a complex, *coherent, rational pattern* of events, which it would be wildly absurd to attribute to blind creative forces and mechanisms. The pre-existence of such a pattern as potentiality is only possible in the ideal; its actual realization is made possible by a rational self-conscious personality, which identifies the ideal with itself. Only by such a Self as we have described could the coherence and rationality



of the pattern be apprehended ; only in such a Self could it exist as ideal.

#### REFERENCES FOR FURTHER READING

A very extensive literature exists, dealing with the various aspects of the topics discussed in this chapter. Of those books already mentioned, JAMES, McDUGALL, WATSON, ADLER, JUNG, FREUD, DREVER are again to be mentioned here. In addition there is the extensive psychoanalytic literature. Of this the following books might be specially noted :

FREUD : *Introduction to Psychoanalysis*. Allen and Unwin.

PFISTER : *The Psychoanalytic Method*. Kegan Paul.

JONES : *Studies in Psychoanalysis*. Baillière, Tindall and Co.

BRILL : *Psychanalysis*. Saunders Co.

HINGLEY : *Psychoanalysis*. Methuen.

Also JUNG, ADLER, WHITE, etc.

Additional books worth consulting are :

SIDIS : *Psychology, Normal and Abnormal*.

MARSHALL : *Mind and Conduct*. Williams and Norgate.

WELLS : *Mental Adjustment*. Appleton.

WARD : *Psychological Principles*. Cambridge University Press.

FLÜGEL : *A Psychoanalytic Study of the Family*. Allen and Unwin.

DEWEY : *Human Nature and Conduct*. Allen and Unwin.

## CHAPTER VIII

### CAPACITIES, GENERAL AND SPECIAL

WE have hitherto been dealing mainly with the tendencies of the human being, and their modification, development, and organization. But, as we have already seen, there are native capacities as well as native tendencies, and capacities have an importance for education only second to the importance of tendencies. Not only does species differ from species among living organisms, and individual from individual within the same species, in the relative prominence of particular tendencies, but species also differs from species, and individual from individual within the species, in native capacities. The facts are so familiar that it is quite unnecessary to elaborate the point. At present we are concerned merely with individuals of the human species, and with such differences of capacity among them as have a bearing upon the process of education. "You cannot make a silk purse out of a sow's ear," is a proverb of which every teacher realizes the significance.

Capacities may be classified into *special* and *general* on practically the same basis as tendencies were similarly classified, that is, according as they manifest themselves in relatively special types of behaviour, and with reference to relatively specific situations, or affect behaviour through a comparatively wide range. The main problems which a psychology of education has to solve are, in the first place, to determine what the main significant capacities are in each group, and with respect to the different processes involved in education as

a whole ; in the second place to devise means by which, in any individual case, the degree of capacity, general and special, may be discovered, in order that suitable educational arrangements may be made for each case ; in the third place, the means being assumed, to investigate the order and mode in which natural development takes place with increase in age of the individual. The second problem is evidently the problem of mental tests which has come into such prominence in recent times. The first problem, however, is no less important for a systematic and complete psychology. Logically it is the preliminary problem. But it is a problem which can only be solved in the most general way without recourse to the results of mental testing. This may not be apparent at a first glance. But that it is so can very easily be shown.

As general differences highly significant for education we should expect to find differences of sensory discrimination, differences of retentiveness, differences of intelligence, and the like. Let us consider the last. Some individuals—children or adults—are more *intelligent* than others. The statement is one which all teachers at least are prepared to accept without question. What this difference really is, however, only the closest scrutiny and the most careful experiment will reveal. It is certain that we often attribute to difference of intelligence what is due to difference of interest in the particular task, or of the knowledge requisite for performing it, or of practice in carrying out the various processes. Even when all allowance has been made for such factors, the teacher is still convinced that there are differences of natural capacity to learn, to understand, or to do, independent of interest, of knowledge, or of training. It is this difference of natural capacity that he designates and recognizes as a difference of intelligence. What he observes is a behaviour difference, a difference in the efficiency of response to certain situations. It is not a difference in efficiency of response which is dependent on physique, superior muscular

strength, or the like. Only when the efficiency of response involves efficiency in perceiving, understanding, and acting, which does not depend on knowledge or training, does the teacher attribute the difference to intelligence, and he would also attribute differences in the ability to acquire the requisite knowledge and skill to the same factor of intelligence. Now it is evident that, even at this point, scrutiny and experimentation are necessary, in order to determine whether any response depends on this factor called intelligence, and to what extent, and the kind of scrutiny and experimentation involved are those involved in mental testing. But in addition to this it is clear that what the teacher is calling intelligence is not a simple character, that it involves or may involve sensory discrimination and retentiveness. Hence further investigation is necessary to determine whether there is a simple character we can call intelligence, and if so, what is its nature, and to separate its effects on behaviour from those due simply to sensory discrimination, retentiveness, and the like. This also will lead us to the kind of experimental work we designate mental testing.

### MENTAL TESTS

Mental tests have originated from three different lines of investigation, and been elaborated from three different points of view. In the first place, many tests originated in the psychological laboratory in the course of development of experimental psychology, in the analytical study of mental processes under standard conditions. Good examples are the various tests of sensory discrimination, span of apprehension, immediate and permanent memory, thought processes. In the second place, many of the tests we now employ originated in the attempt to measure the various psychical capacities and functions, in the same way as we measure physical capacities and functions, the dominant interest being biological or anthropological, and the aim being to study the relative



effects of heredity, environment, race, etc., in the determination of psychical characters. In the third place, certain practical needs, especially in recent times, have determined very important lines of investigation in mental testing. The needs of the alienist, the educationist, and the employer of labour have been particularly pressing and important, the need, that is to say, of determining abnormalities of a pathological order, the need of classifying children with reference to their educational possibilities, and the need of testing vocational fitness.

The tests, developed from these different points of view, are as various as one would expect, in character, in method of administering, and in value. We shall first consider their use for what may be called generally "theoretical" ends, and thereafter their use for "practical" ends. It must, however, be clearly understood that in the last resort the ends for which we employ mental tests are in the main practical, at least in a wide sense of the word.

The first and most general theoretical aim has been the exact measurement of psychical characters. The interest of this line of investigation is of course much wider than the merely educational. If we had a series of mental tests sufficiently reliable and exact to measure psychical characters, we should be able to state precisely what part heredity plays, and what part environment, in the mental make-up of each individual, what is the exact nature and scope of the differences due to differences of sex, differences of race, and so on. We are, however, still very far from this consummation. Nevertheless, much progress has been made, and much information that is educationally important can be made available. A very interesting method of representing the results of these and any analogous tests is worth noting. That is representation by means of what Burt has called a "psychograph." The degree in which different characters are present is represented by the height above a definite base-line. The units in which

the quantitative estimation of performances is expressed must be comparable with one another, but that does not present a problem beyond the skill of the mathematician. By joining up the various points thus obtained we get a curve representing the individual's "psyche," with a comprehensiveness and detail in proportion to the comprehensiveness and detail of our tests. In order to get the fullest possible information from such a psychograph, we require for comparison purposes the norms of performance in each of the tests.

A second theoretical object, somewhat closely related to this general object, is the study of various problems arising in connection with the "theory of types" or "theory of multiple types," as Thorndike prefers to call it.<sup>1</sup> Very early in the history of mental tests investigators came to the conclusion that varieties of human intellect and character could be classified under definite types. It must be confessed that the evidence for such a conclusion was not very adequate or satisfactory. Nevertheless, some of the most distinguished representatives of this particular branch of psychology, like Stern, Binet, Meumann, have committed themselves to this view. Perhaps the real source of the theory of types is to be found not in the evidence supplied by the results of investigation so much as in the almost universal tendency to generalize from a few striking instances, especially if the result is to simplify the various problems in hand. While discounting this tendency in the interest of a cold scientific view of the facts, we must not rush to the other extreme and as uncritically deny that the theory of types has any truth in it. At the present time we do not appear to have sufficient evidence to justify us in pronouncing either for or against.

Let us examine the evidence. In various tests, as, for example, attention tests, description tests, imagination tests,<sup>2</sup>

<sup>1</sup> *Educational Psychology, Briefer Course*, p. 415.

<sup>2</sup> See Whipple: *Manual of Mental and Physical Tests*.

the upholders of the theory of types claim that the results show definite types of subject. Thus Stern speaks of the external observer and the introspective thinker as two different types so far as the direction of thought is concerned, or the musical and the unmusical as two types so far as discrimination of pitch is concerned; Binet classifies subjects into the "describing" type, the "observing" type, the "emotional" type, and the "erudite" type, on the basis of their descriptions of objects; various investigators, and numerous writers of text-books, classify subjects into visual, auditory, tactual, motor, and so on, as regards their imagery. Classifications of this kind suggest two things: in the first place, that the majority of individuals fall under one or other of the types, that is, that the mixed type is the exception, the pure type more or less the rule; and in the second place, that generally speaking the types are mutually exclusive, that the good external observer, for example, will in general be a poor introspective thinker, that the visual type of imagery will tend to exclude the auditory and other types, and so on. The first suggestion at any rate seems to be quite contrary to the facts found by nearly every investigator. The second has so doubtful a look that one would require unambiguous confirmatory evidence before accepting it. The evidence from the few experimental investigations aiming at the verification or otherwise of the theory of types as regards simple characters, like type of imagery, tells against the theory, that is, tends to favour the view that the distribution of characters in the human being is more or less of the normal type, by far the greater number of cases being found about midway between the extremes which have been taken as types. On the other hand, nothing like sufficient evidence has been brought forward to justify us in rejecting the theory as regards complex characters. As we shall see presently, the evidence in this case is on the whole in its favour.<sup>1</sup>

<sup>1</sup> See Thorndike: *Educational Psychology, Briefer Course*.

A third theoretical object has in turn close relations, at least in some aspects, with this second. That is the study of what we may call hypothetical general or central factors. We must first decide whether there is such a factor underlying different functions, and then determine how far we can estimate it quantitatively by means of our various tests. The main hypothetical central factor sought has usually been identified with general intelligence, and the whole line of investigation, with which we are at present concerned, is usually regarded as an attempt to define the meaning of general intelligence, and to find tests which will enable us to measure it. Theoretically the investigations involve more, but from our present point of view that is what they amount to.

The method of procedure adopted in these investigations depends on the use of the "correlation coefficient."<sup>1</sup> One or more estimates of general intelligence must be obtained—from examination marks, the opinion of teachers, the opinion of classmates, etc. Then selected tests are given. The correlation coefficients of the results of these with the general intelligence estimates, and with one another, are calculated. These are considered as showing how far each test can be taken as a test of intelligence, and also as indicating to some extent the nature of general intelligence itself.

In order to get a clear view of this whole line of investigation, it will be best to give a brief historical résumé of the work that has been done. Previous to the beginning of the present century, though there had been considerable work with mental tests, and several attempts to measure general intelligence by means of such tests as appeared suitable, no significant progress had been made owing to the crude and arbitrary way in which the results were treated. This state of

<sup>1</sup> The "correlation coefficient" might be said to measure the degree of concomitant variation in two characters or capacities tested. It is expressed as a fraction varying between  $+1$  and  $-1$ . For further information see Brown and Thomson: *Mental Measurement*.



matters was only ended when the mathematical methods of correlation began to be applied to the results of such experiments. This seems to have been first done by Wissler. In 1901 he published the results of an investigation in which he tested some 200 college students with a number of simple tests, and calculated the coefficients of correlation of the results of these tests with one another and with the college marks of the students in various subjects, and finally the marks in various subjects with one another. He found only slight correlation between one mental test and another, or between the mental tests and college marks, but considerable correlation between the marks in one subject and the marks in another. In the following year were published the results of investigations by Aikins and Thorndike. In this case functions were tested, which were more similar, and apparently more closely allied to one another, than those tested by Wissler, and again the correlations were found to be low. Even between different tests devised to measure speed of association, hardly any correlation was found. Hence the investigators maintain that "quickness of association, as an ability determining the speed of all one's associations, is a myth,"<sup>1</sup> and that there is no apparent relationship between mental functions, which, on the evidence of introspection alone, would be classed together as particular instances of the same general central function.

The inference from these early results is that there is no general function which can be called intelligence. The next important investigations were those of Spearman, the results of which were published in 1904 and 1906. Unlike the earlier investigators, Spearman found fairly high correlations between the results of different tests. Not only so, but he found the correlation coefficients, obtained by taking into account marks in certain school subjects as well as the results of tests, to be capable of arrangement into a kind of hierarchy, and he took

<sup>1</sup> Quoted from Brown: *Mental Measurement*, p. 82.

this as evidence for an underlying unity. "Wherever," he says, "branches of intellectual activity are at all dissimilar, then their correlations with one another appear wholly due to their being variously saturated with some common fundamental function." Further, from the results of his second investigation, he saw reason to conclude that the central factor must be regarded as a "plastic function of the nervous system," and is certainly not to be identified with voluntary attention, as Binet had suggested.<sup>1</sup>

This work of Spearman's is of very great importance historically, as the starting-point of new investigations which we cannot follow here. His conclusion that there is evidence of a central factor has been fully confirmed by later workers. Even Thorndike has seen fit to admit that there is evidence of a complex "set of bonds" between the psychological equivalents of the "formal side" of thought and its content. The nature of the central factor still remains in dispute. The more recent work of Brown and Burt would seem on the whole to favour the view that there is close relation between the central factor and voluntary attention. Theoretically this question is of some importance. If the central factor can be identified with voluntary attention, there would be grave doubt whether a general capacity such as intelligence existed, independently, that is, of native tendencies. If, on the other hand, the central factor is, as Spearman contends, a "plastic function of the nervous system," the question of its relation to retentiveness at once arises. On the whole, therefore, the theoretical problem as to the nature of what we call general intelligence remains for the present unsolved. It should be noted that Burt, as a result of extensive testing of school children in London, finds evidence of more than one general factor, in addition to the factor we call intelligence.<sup>2</sup> Burt's work in intelligence testing is of quite

<sup>1</sup> *Amer. Journ. of Psych.*, vol. XV; *Brit. Journ. of Psych.*, vol. V.

<sup>2</sup> *The Distribution of Educational Abilities* (London County Council publication).

special significance, and we shall return to it presently after considering one other theoretical object of mental testing.

The fourth theoretical object is the study of mental growth and development. This might be regarded as the earliest aim of all in the development of mental tests, and as really having its source in the child-study movement initiated by Rousseau. Before quantitative methods were duly appreciated by the psychologist, the differences between the child and the adult, and between younger and older children, were expressed in purely qualitative terms. With the extension to child-study of scientific methods of investigation, quantitative estimates came more and more into evidence. At the present day we recognize that, while there may be differences which as yet can only be expressed qualitatively, our knowledge of such differences is still incomplete until a quantitative statement is obtained. As can be seen from a brief glance through a book like Whipple, a great mass of material is now available to enable us to trace the development in the child of various capacities and characters. Unfortunately, however, the material requires a good deal of sifting, and in many cases the accumulation of facts has outstripped the development of methods.

In order to study successfully the development of mental capacities and characters, three things are necessary. These are standard tests, a standardized method of procedure in giving the tests, and definite norms of performance. These are the problems with which investigators are at present engaged. No one has done more valuable work in this field than Cyril Burt. Starting from the problem of the central factor, which we have just been considering, he proceeded to investigate the value of existing tests, and to devise new tests, in a series of experiments which have become classical, and are models of their kind. As far as our present topic is concerned, the main conclusion established—in his opinion—by these experiments is that the best tests for measuring

general intelligence, that is, general mental efficiency, are tests of the higher levels of mental activity. Apart from this general conclusion, we owe to these experiments many of the best of the standard tests of intelligence we have, invaluable evidence with respect to the value of others, and some of our most reliable norms of performance.<sup>1</sup>

With respect to methods of testing, it may safely be said that methods of procedure have now become standardized. One important recent development in method, however, deserves to be specially mentioned. Most of the earlier testing was individual testing, though Burt in his Liverpool investigation of 1910<sup>2</sup> had experimented with group testing. When America entered the Great War, it was decided to test mentally all her soldiers. For this purpose individual testing was out of the question, and accordingly all the types of test adopted were arranged so as to be given simultaneously to large groups. The result has been greatly to stimulate group testing, so that in the future all preliminary testing for educational purposes will doubtless be done in this way.

It is plain that the tests devised to throw light upon the development of the child with respect to intelligence and general mental efficiency have an immediate and direct practical bearing, and that investigations with this object in view are in practice bound up with the use of mental tests for educational or other purposes. Accordingly, we must next consider the employment of mental tests for practical purposes, and we may speak of tests employed for this purpose as *diagnostic* tests.

### DIAGNOSTIC TESTS

The object of diagnostic tests may be described generally as the determining of the grade of mentality of any individual,

<sup>1</sup> Articles in *Brit. Journ. of Psych.*; *Journ. of Exp. Ped.*, *Child Study*, etc.

<sup>2</sup> *Journ. of Exp. Ped.*, Nov., 1911



or of some definite phase or aspect of the mentality. We may seek to determine the grade of mentality either for purposes of classification, or to diagnose mental defect. Hence diagnostic tests are of interest both to the teacher, and to the alienist or psychiatrist. The tests employed for diagnostic purposes are not in principle different from those we have hitherto been discussing, and some of the tests used in the testing of intelligence by Burt and others were originally devised as diagnostic tests. The well-known *combination* test, for example, was devised by Ebbinghaus as a test for the presence of fatigue. As a rule, however, the tests employed for diagnostic purposes have characteristics of their own, though there is no reason except convenience why any mental test whatsoever might not be used for such purposes.

The most familiar diagnostic tests are those devised and used by Binet and Simon, generally spoken of as the "Binet Scale."<sup>1</sup> Binet and Simon devised altogether three series of graded tests, in the first instance and in particular for the diagnosis of mental defect, but also in general for the grading of the mentality of children of different ages. The first series was given to the world in 1905, the second in 1908, and the third in 1911. The 1905 series differed from the other two in being much less elaborate, and in making no attempt to group the various tests according to the age at which the child may be expected to pass them, a feature which has come to be regarded as characteristic of the Binet Scale. The early series was, however, graded, and the type of test employed was precisely that of the later scales, all being of the simplest description, requiring practically no apparatus, and all being intended to indicate ability or capacity rather than acquired knowledge, and to be independent therefore of educational attainments.

<sup>1</sup> Originally given to the world in articles in *L'Année Psychologique*. These are translated in *The Development of Intelligence in Children* (Vineland Training School Publication).

The Binet Scale of 1908 was more complete and more ambitious. The notion of a graded scale was retained, as also most of the tests of 1905. But there were numerous additions to the series of tests—in all thirty-three new tests—and the tests were arranged in year groups, corresponding to what the authors regarded as the usual attainments of normal children at the various ages. The norms were established by an examination of over 200 French children, drawn mainly from the poorer classes. The Scale of 1911 was simply the Scale of 1908, modified in the light of results obtained by Binet himself and by others in testing the original scale.

Almost all the characteristic features of the Binet Scale have been subjected to criticism. In the first place the arrangement of the tests in age groups appears to involve the assumption that the mental development of all normal individuals proceeds by more or less similar stages, that at each stage the various functions are related to one another in approximately the same way, and that each stage corresponds to a certain physical or physiological age. The assumptions have been challenged. It may be possible to justify the assumptions, it is argued, but the evidence obtained from testing the Binet Scale either affords strong presumption that the assumptions are not valid, or indicates that the Scale itself is defective. Many investigators have found their subjects test well in advance of Binet's representative group. Binet himself records the fact that he found children in one quarter of Paris advanced to the extent of four or five years, and adds "one must therefore no longer consider the retardation or advance of three years an anomaly."<sup>1</sup> This means a permissible range of variation of six years on a Scale whose total range is twelve years. Yet Binet himself thinks it worth while to estimate mental age to fifths of a year! Moreover, we cannot always assume, as Binet does, that a child who has passed all the tests for one year would pass all the tests for earlier

<sup>1</sup> *L'Année Psychologique*, 1911.

years. There is no regularity, for example, in the occurrence of memory tests in the age groups. Hence our estimate of the mental age of a child with a specialized defect, as of auditory memory, will be very unreliable. On the whole, the evidence certainly seems to point either to error in the underlying assumptions, or defect in the Scale, and it must be confessed mainly to the latter rather than the former.

In the second place it is argued that the "all or none," or the "pass or fail" principle, applied by Binet in all the tests, gives rise to several defects and disadvantages. A child may almost, but not quite, pass a test. He is credited with no more than the child who fails hopelessly. In the third place exception has been taken to many of the tests themselves, and to their placing. Burt, for example, argues, and on apparently good grounds, that the different tests have very different values as tests of intelligence, and that in many cases better tests can be found. To some extent we may defend the Scale against this indictment by pointing out that the tests are intended to test general mental development, which is not necessarily identical with general intelligence, and hence some of the tests may conceivably be poor tests of general intelligence, and yet good tests of other aspects of mental development. In the light of actual results of investigation the defence is largely academic. With regard to the second part of the criticism—the placing of the tests—it is sufficient to point out that no two investigators are agreed as to the correct placing of some of the tests, and in many cases there is a difference of three or four years.

The general conclusion at which we are bound on the evidence to arrive is that the Binet Scale, in place of being an almost perfect measuring instrument—the last word, as it were—is only an extremely rough and ready approximation. It is well to remember that we are only at the beginning, not at the end, of mental testing. The devising of suitable tests, and the testing of these tests, must still continue. In

the meantime we may use the Binet Scale, but always with the clear knowledge that it is merely of the nature of a "first aid." The best version of the Scale is probably that due to Terman, known as the Stanford Revision.<sup>1</sup> In this version considerable alterations have been made as regards the placing of tests, and several new tests have been added. Terman also advocates the expressing of the results of mental examination by means of the Scale in the form of what he calls an Intelligence Quotient (I Q), which is the ratio of the mental age to the chronological age. But the IQ is just as exact and reliable as the Scale on which it depends. The most favourable estimate of the value of the Binet Scale is that of Goddard. He tested practically all the children in one complete school system, and giving a distribution curve for all the subjects examined, he goes on to say: "To a person familiar with statistical methods the curve of itself amounts to practically a mathematical demonstration of the accuracy of the tests. The results could not arrange themselves on this curve, which is recognized as practically a normal curve of distribution, if the questions were not carefully graded. Secondly, if they were not right, age for age, but were too hard or easy, the largest group would not be one at age, but would be a year below or a year above, according to whether they were too hard or easy. Consequently we are forced to the conclusion that the questions that Professors Binet and Simon have selected are well graded, at least from the ages of five to twelve, and that they fit the ages to which they are assigned."<sup>2</sup> It has often been said that statistics can be made to prove anything. When Goddard's results are analysed they tell a very different story from his. Only by taking all the ages together can a normal distribution curve, such as he gives, be obtained. But this conceals the very facts we wish to study, in particular the extent to

<sup>1</sup> See Terman: *The Measurement of Intelligence*.

<sup>2</sup> Quoted in *A Point Scale*, p. 38, from article by Goddard in *Ped., Sem.*, 1911.



which the scale is correct for each age. A frequency table based on Goddard's figures at once shows that the Scale is too easy at the lower end, and too difficult at the upper, that it is in fact approximately correct only for middle ages—from 7 or 8 to 10—a result similar, as we should expect, to that obtained by other investigators.

The latest attempt to solve the problems of diagnosing defect of retardation, and of classifying children as regards mental development, is the "Point Scale." The best-known scale of this kind is that due to Yerkes, Bridges, and Hardwick,<sup>1</sup> usually known as the Yerkes-Bridges Point Scale. This is an attempt to avoid the chief defects of the Binet Scale, while retaining the character of the tests, and for the most part the tests themselves. Grading, however, is by "points," not by age group.

The general principles underlying a point scale deserve particular notice, all the more because a good deal of the criticism directed against this method arises from failure to appreciate those principles. First of all it must be clearly understood that the points do not represent equal units of performance, and are not intended to do so. They ought, however, to represent as nearly as possible equal proportional increases of ability. We might illustrate in this way. A score of 3 in a test to which the value 5 is attached means ability that is  $3/5$  or 60 per cent. of perfect ability in that test, while a score of 4 means ability that is  $4/5$  or 80 per cent. The difference is not a mere difference in quantity of performance, as it would be, for example, in the case of an arithmetic paper with three or four sums done out of five, but a difference in quality, and the general effect approximates to a grading method. What is necessary then is that the difference should express difference in ability. Because of this fact expression of the result by the mere score will in general give a wrong impression altogether, seeing that the

<sup>1</sup> *A Point-Scale for Measuring Intelligence.*

score alone will inevitably suggest a quantitative estimate pure and simple.

In the second place, because of this characteristic, each test must allow of marking in such a way that every additional mark represents proportional increase of ability. Where the test consists of several parts, these will be arranged in order of difficulty. Say there are four parts. The successful performance of the fourth will really carry along with it the successful performance of all the others. The mark 1 assigned for the fourth is therefore by no means the same quantitatively as the mark 1 assigned for the first. The difficulty of each part is represented not by the mark given but by the place relatively to the others. The best example of this kind of grading is seen in the digits test.

In the third place, the tests themselves must also be arranged in order of increasing difficulty. The order of increasing difficulty in this case can only be determined by trial. The present order of the tests in the Yerkes-Bridges Scale is different from that first suggested, the changes made being based upon the results of such trial. But in this case grave difficulties present themselves, because other considerations must be taken into account. The tests do not test a single mental function, but several relatively independent functions. As relatively independent these functions develop more or less independently with increasing age, or we might say their relation to one another at any age is not constant for all individuals. Consequently the order of difficulty of the tests may be different for different individuals. Not only so, but results show that the order of difficulty is different for different ages, owing possibly to the more rapid development of some functions compared with others.

Moreover, the giving of so many points on the same scale to different functions involves a relative estimate of these functions with reference to general intellectual ability. Unless, therefore, the points assigned are based upon some

correlation with general intellectual ability in each case, our scale of points can hardly fail to be somewhat arbitrary, and we have no guarantee that points will mean the same thing, or approximately the same thing, in the individual cases, even though the thing meant be increase of ability.

In view of these difficulties it would seem that a point scale can never be regarded as laying claim to validity as a method of scientific measurement, unless it is based on quite different principles from the Yerkes Scale, and to criticize it from this point of view is largely to miss the mark. It is simply a practically useful instrument for purposes of classification, to be supplemented where necessary by methods which have definite scientific validity as methods of measurement.

These defects and difficulties, however, indicate one way in which the Yerkes Point Scale appears to be capable of improvement, even with reference to its practical usefulness. Yerkes is himself conscious of this fact, and is at present working out what he calls a Universal Point Scale, from which some of the chief defects will be absent. The present tests arrange themselves under more or less definite heads, according to the kind of function they are intended to test, but by no means systematically. Evidently we ought to start with some kind of system determined by the aspects of the mental life which we wish to test. Let us say, for example, that we wish an estimate of the individual in terms of : Receptivity, Memory and Imagination, Affectivity, Conceptual Thought and Reasoning. We should then choose definite tests under each head, and have perhaps five out of twenty devoted to each aspect. These would be arranged in the Point Scale on the same basis as the tests are arranged in the Revised Point Scale of Yerkes. In reporting on the results of the application of the Scale we should report separately under each head, and the report might take the form of an equation :

$$X = R \ 17/20 + M \ 15/21 + A \ 18/22 + C \ 16/19 = 66/82$$

where the denominator in each case denotes the norm for the particular group to which the individual tested belongs. This is really the scheme upon which Yerkes is working in connection with his proposed Universal Point Scale. Whether it will ever be possible to form a Scale satisfying the requirements of scientific measurement is another matter, but at all events the Scale can be improved in some such way as this with reference to its practical use as a kind of "first aid."

In the author's opinion the Point Scale is in principle the most satisfactory type of scale yet devised. At the same time it must not be thought that practically the Yerkes-Bridges Point Scale is to any significant extent superior to scales like the Binet Scale. Other Point Scales, as, for example, the Cornell Point Scale,<sup>1</sup> while interesting enough, cannot be placed in the same category as far as practical use is concerned. Apart from the method of marking, the great advantage of a Point Scale is undoubtedly the way in which it can be used to test both general and special capacities, though only in a preliminary way, as far as regards the latter. The method of marking is of course the method used in practically all group tests.

In addition to the scales we have discussed there are other scales which deserve mention, though we cannot discuss them here. Such are the De Sanctis Tests for diagnosing mental defect in a child's early years, Burt's Reasoning Tests, the Porteus Maze Tests, Ballard's Tests, Godfrey Thomson's Tests, all of which have considerable theoretical and practical importance.

#### EDUCATIONAL ABILITIES AND ATTAINMENTS

The present chapter would be incomplete without some notice of a development which, though belonging strictly to the new science of Experimental Education, is not without

<sup>1</sup> *Journal of Educational Psychology*, vol. VIII, p. 539.



its interest for the Psychology of Education. The attempt to measure educational abilities and attainments by means of standard tests and scales is a natural development of mentality testing. Methods of procedure having been settled, it should theoretically be possible to find tests which will measure educational ability and progress, at least as readily as tests which will measure native mental endowment. Practically, however, the measurement of educational abilities involves special difficulties. School processes are exceedingly complex, standards of work vary, the order of succession of the steps in the various school subjects is not constant, nor is the rate of progress to be aimed at and expected generally agreed upon. Moreover, in some cases educational ability or acquisition cannot be measured on any scale with a determinate zero or a determinate unit. These difficulties, though serious, are perhaps not insuperable. They differ in degree, rather than in kind, from the difficulties we meet in all mental testing.

The special abilities to be measured as educational abilities are defined for us by the school subjects. So far our problem is easier than the problem of measuring native abilities. As defined by the school subjects, educational abilities may be said to fall into two groups, those which can be measured immediately in terms of performance, as, for example, arithmetical ability, and those which can only be measured or estimated after we have obtained a scale determined by some method of grading, as, for example, drawing. The latter present special difficulties, and it is a matter of some doubt whether objective measurement is really possible. As regards the first group the problem is not essentially different from that involved in mental testing. The use of graded scales is of no particular psychological interest, and we need not spend any further time in discussing it. The best known such scale is the Thorndike Scale for Handwriting, in using which a specimen of handwriting is evaluated

by determining that specimen in the Scale to which it most closely approximates in merit. With respect to Performance Scales, several points of psychological interest emerge.

As in the case of mental testing, in educational testing we require standard tests, a standard method of procedure in applying the tests and in marking results, and norms of performance. Of these desiderata the first is the most important, and also the most difficult of attainment. In drawing up tests for ability and attainment in any school subject, we must in the first instance analyse the mental processes involved, or at least determine the essential constituents of the ability from the point of view of our aims in teaching the subject. That done, we can prepare tests which will test each of these constituents, not necessarily separately, of course, for a single test may be employed to test several constituent elements, always provided we have come to a decision regarding the relative importance of each, and have represented this faithfully and accurately in our test, and in our method of marking the test. In some cases it is advisable to test constituent processes separately, especially when, as in the case of arithmetic, they are essentially different. Thus in arithmetic we are concerned both with number work and with problem work, and it is obviously desirable to keep these separate in our testing, since they represent very different complex processes, and vary independently to such an extent, that our results, if we do not distinguish them, may conceal the very differences we wish to discover. In reading it may be necessary similarly to separate facility or fluency and comprehension. This is the first point of general psychological interest in connection with educational testing.

Perhaps no school subject presents so many points of psychological interest as spelling. The testing of spelling is still in an unsatisfactory position. The usual method of testing is by the spelling of individual words. It is

doubtful how far this is legitimate, seeing that a word to be a word must have a place in a definite context of meaning. If the meaning factor is eliminated it is questionable how far we are justified in calling the word a word, rather than a meaningless sound, or in talking of the test as a test of spelling at all. Moreover we are eliminating a factor which normally has a certain determining effect on spelling, without clear knowledge of, or allowance for, this effect. If, however, this method of testing must be adopted, we must test by some method of sampling, and the question arises as to what spelling vocabulary we should take our samples from, or how far we ought to expect a spelling vocabulary outside of, and wider than, the vocabulary of the child's common speech. Lastly almost every word is a spelling problem different from every other word, and often different for every individual, and sometimes even different at different times for the same individual. Consequently the grading of words as to difficulty is wellnigh impossible, all the more so, seeing that familiarity with a word, or with certain words, may change their position on the scale of difficulty to an enormous extent.

In spite of these difficulties much progress has been made with the devising of standard tests for school abilities, and the results are available both for practical and for theoretical purposes. Theoretically the main service which such testing can render is to throw light upon the various factors involved in educational ability, its relation to general intelligence, its relation to special abilities, the relation of special abilities to one another, and problems of a like kind. Much valuable work in this field has again been done by Cyril Burt. On the basis of the results obtained from testing various school subjects with his own tests, he found it possible to classify school subjects into four groups:—

1. An Arithmetical Group, consisting of the two arithmetical abilities, which show so large a correlation with one

another that, in Burt's opinion, it may be necessary to assume a special underlying arithmetical ability.

2. A Manual Group consisting of Handwork, Drawing, and Writing. These show, if anything, negative correlation with arithmetical ability, and this indicates that the special factor underlying the correlation is at any rate distinct from that involved in the arithmetical abilities.

3. A Linguistic Group consisting of Dictation and Reading (Speed). These subjects show no correlation with the Arithmetical Group, and negative correlation with the Manual Group is indicated. They show, however, some correlation with the next group, and the two together might form what we could call a Literary Group.

4. A Composition Group consisting of History, Geography, Science, and Composition, all of which appear closely related to one another.

Burt thinks that the line of demarcation between the four (or three) groups must not be considered as definite and sharp. To some extent they overlap, and accordingly he would arrange the subjects, in order to show their relations to one another, round the circumference of a circle, in the form of a clock diagram. The overlapping he calls "cyclic overlap." This cyclic overlap makes it somewhat difficult to show clearly the presence of the hypothetical general factor, or to calculate accurately coefficients of correlation with this factor. The general conclusion he draws is that "school achievements are due to mental qualities of two kinds; first a general ability entering into all school work; secondly special aptitudes for particular subjects. The general ability is itself complex, but involves general intelligence."<sup>1</sup>

<sup>1</sup> *Distribution and Relations of Educational Abilities*, p. 59.



## REFERENCES FOR FURTHER READING

Again a very extensive literature is available, and essential for any one who desires to be thoroughly acquainted with mental testing. Of fundamental importance are the following :

1. BINET AND SIMON : *The Development of Intelligence in Children*. Vineland Training School Publications.
2. Terman : *The Measurement of Intelligence*. Hartrap.
3. YERKES, BRIDGES, HARDWICK : *A Point Scale for Measuring Intelligence*. Warwick and York.
4. WHIPPLE : *Mental and Physical Tests*. Warwick and York.
5. YOAKUM AND YERKES : *The American Army Tests*. Sidgwick and Jackson.
6. THORNDIKE : *Educational Psychology, Briefer Course*. Columbia University Press.
7. STARCH : *Educational Psychology*. Macmillan.
8. STARCH : *Educational Measurements*. Macmillan.
9. BURT : *The Distribution and Relations of Educational Abilities*. London County Council Publications.
10. BURT : *Mental and Scholastic Tests*. London County Council Publications.
11. BROWN AND THOMSON : *Mental Measurement*. Cambridge University Press.

## CHAPTER IX

### MENTAL TRAINING AND DISCIPLINE

THE view which regards education as largely, if not wholly, a process of intellectual training and discipline is a very old one. We find it in Plato and Isocrates among the Greeks, in Cicero and Quintilian among the Romans, and in many educational theorists of modern times. At times it has been urged by way of special pleading in favour of a traditional type of education, which had already got out of touch with life conditions. When, for example, Latin declined in practical importance during the seventeenth century, by ceasing to be the exclusive language of religion and the clergy, of the universities and centres of learning, of culture, the humanities, and diplomacy, all the forces of conservatism strove to entrench its position in the schools by arguing that education does not consist so much in the matter learned, as in the effect on the mind of the learning process, and that no subject is so important for this effect on the mind, this intellectual training and discipline, as Latin.

That one aspect of education consists in intellectual training and discipline, there can be no doubt. The only question is as to what we mean by intellectual training and discipline, that is to say, what training and discipline involve. For a behaviourist psychology this aspect of education must necessarily receive emphasis. It remains to be seen how far a behaviourist interpretation can be made to cover the facts.

### TRAINING *and* DISCIPLINE

The fact that a famous educational doctrine appears sometimes as the "doctrine of formal discipline," and sometimes as the "doctrine of formal training," and the further fact that criticism directed against the notion of formal training does not seem relevant to the matters raised by some leading representatives of the discipline view—these matters we shall discuss presently—suggest the possibility, and even desirability, of distinguishing between "discipline" and "training."

The distinction drawn by a well-known Scottish educationist of last generation—Simon Laurie<sup>1</sup>—was based upon the distinction between *power* and *facility*. The development of mental resourcefulness, initiative, power, if that be possible, is mental discipline, he said, while the development of facility in mental operations is mental training. The distinction is clear and definite, and seems worth adhering to. For illustration purposes Laurie used to contrast the mental effect produced by working out a rider in geometry for oneself, and that produced by following, and understanding, the geometrical reasoning in the text, or as given by the teacher. Obviously in such a case mental discipline will involve all the mental training which the working out of the particular problem can give, whereas mental training does not necessarily involve more than a minimum of mental discipline. Though distinguishable, the two are apparently not separable.

Let us turn now to the traditional, and still popular view of education, which regards it as essentially a process of intellectual discipline, and professes adherence to what has usually been called the "Doctrine of Formal Discipline"—more correctly so than "Doctrine of Formal Training." The leading principles of this theory can be comprised in three propositions. 1. Exercise and effort develop mental power, in so far as they are exercise and effort, and independ-

<sup>1</sup> Professor of Education at Edinburgh University, 1876-1903. See his *Institutes of Education*.

ently of the mode of the exercise, or the direction of the effort. 2. It is possible to develop separately the child's "power of observation," memory, etc., in a perfectly general way, by the exercise of these "powers" in any material. 3. The exercise of the mind in any subject develops the mind as a whole, although subjects may differ in their value for all-round development. For example, the mental discipline or training, derived from the study of grammar, or mathematics, is carried over as added power and facility into the study of other subjects.

Some, if not all, of these propositions can obviously be tested by experiment, and a good deal of experimental work has been carried out for this purpose. Leaving the discussion of this experimental work aside for the moment, let us consider the three propositions on a theoretical basis, taking them in the order given.

1. There seems to be a kernel of truth in the first proposition. We all realize that work or effort is essential in the school, if there is to be education in any real sense. It is only by overcoming difficulties that we learn to overcome difficulties, and it is only through effort that progress can be made. On the other hand, it seems absurd to argue from this, as some extreme disciplinarians argue, that a child gets more intellectual discipline, when he does a piece of work, feeling it a task, than when he does the same piece of work willingly, and because he is interested in it, that attention to what is uninteresting and disagreeable is, *ipso facto*, educative in a high degree. It is clear that motiveless activity is a psychological impossibility. There must be some interest or end involved to get the work done at all, and if a child does his work, feeling that it is a task, as soon as the external pressure or motive is removed, he will naturally turn to that in which he is really interested. Effort in the last resort is only put forth in the service of an interest. If we wish to develop the power of meeting difficulties in after-life, it is



clear that our aim must be the building up of stable and permanent interests, simply because difficulties will only be met and overcome in the service of an interest. Neither in the school, nor in after-life, can we have mere exercise and effort apart from an interest.

2. The second proposition need not detain us long. So far as it commits us to the Faculty Psychology, it is quite generally recognized at the present time as untenable. There is no generalized "faculty of observation" for example. An individual observes what his knowledge and training have prepared him, and his interests prompt him, to observe. Similarly we remember what we are interested in, that is, as a general principle. The only way to develop wide observation is by building up wide interests. We may, of course, develop a habit of observing from the mere interest in observing, but it is difficult to see what possible service this could render, except to a Sherlock Holmes, and its generality is still questionable, as we shall see presently.

3. The third proposition involves the psychology of Habit, as well as the psychology of Interest, and expresses that aspect of the theory which most frequently finds expression. The assertion is that there are general powers of the mind, which are developed to some extent by all school subjects, though not to an equal degree, and that the added power gained in the study of any one subject may be transferred to any other subject, and means therefore added power in all subjects. Again there seems to be a basis of truth underlying the general statement, but a wrong analysis is made of the factors involved. If, and so far as, real mental growth and development is furthered through the study of any particular subject, we should expect the results to be carried over to other subjects. Hence, if initiative and resourcefulness are developed in school work, if the pupil really learns to meet problematical situations, and to deal with them himself, the results are not necessarily confined to the particu-

lar subjects. Moreover, so far as stable interests and ideals of work are built up through the study of any subjects, if these interests and ideals are applicable, or transferable, to other subjects, the mind comes to these other subjects with what might be called added power. This point has been specially emphasized by Bagley.<sup>1</sup> Such seems to be the position with respect to mental discipline. On the other hand, so far as the individual is trained in certain mental operations by a particular study, that training is not necessarily transferred to other studies, except so far as the same mental processes are involved. Evidently in this case, we are not dealing with interests or ideals, but with a certain facility arising from habituation. At this point then, theoretically, the "doctrine of formal training" ought to break down. Facility in those mental operations, which are characteristic of mathematics, we should expect to remain facility in mathematical operations alone, or in those operations which are essentially similar.

### LEARNING

Before going on to consider the experimental investigation of the contentions of disciplinarians with respect to formal training, it will be advisable to come to an understanding regarding the nature of learning. This is all the more necessary because of the fact that the extreme behaviourist, declining the evidence of introspection, attempts to interpret learning in purely objective terms, and therefore as regarded from the outside. The best course of procedure will probably be to examine the account of learning, given by a behaviourist like Thorndike, for example, and note the points at which it must be modified or supplemented.

Let us first of all, then, get a clear idea of what Thorndike's views are. "Human nature," he says, "is the result

<sup>1</sup> *The Educative Process*, p. 213.

of the original nature of man, the laws of learning, and the forces of nature amongst which man lives and learns.”<sup>1</sup> As regards the original nature of man, that consists of a great number of original tendencies—a far greater number than we have recognized, because of the fact that Thorndike refuses to grant that there is any single instinct of fear, anger, curiosity, and the like—which tendencies may be regarded as congenital connections, or bonds, of varying degrees of strength, between situations presented in the physical or social world and the responses of the human being. In certain cases modifiability is characteristic of these responses ; that is to say, learning is possible.

Learning takes place in accordance with three laws, the Law of Readiness, the Law of Exercise, and the Law of Effect. The Law of Readiness may be stated thus : “ When any conduction unit is in readiness to conduct, for it to do so is “satisfying,” for it not to do so is “annoying.” By employing the terms “satisfying” and “annoying,” Thorndike, one would imagine, is abandoning the purely behaviourist point of view. But that is not so. He defines a “satisfying state of affairs” as “one which the animal does nothing to avoid,”<sup>2</sup> but rather seeks to maintain. By an “annoying state of affairs” he means “one which the animal does nothing to preserve,” but rather tries to put an end to.

The Law of Exercise—which includes the Law of Disuse as well as the Law of Use—may be expressed in the form : When a “modifiable connection” is actuated, that connection’s strength tends to be increased ; in so far as a connection is disused, its strength diminishes. The Law of Effect takes the form : “ When a modifiable connection between a situation and a response is made and is accompanied or followed by a ‘satisfying’ state of affairs, that connection’s strength is increased” ; when “it is accompanied or followed by an

<sup>1</sup> *Educational Psychology*, vol. II, chap. I.

<sup>2</sup> *Briefer Course*, p. 50.

‘annoying’ state of affairs, its strength is decreased.”<sup>1</sup>

All learning then is a matter of the modification of individual bonds already existing, or the establishing of new individual bonds in accordance with these laws.

The process of learning is exhibited in its simplest form in animal learning—learning by trial and error. This is indeed the type of all learning according to Thorndike’s view. Let us see how Thorndike describes animal learning. An animal is confronted with a certain situation which is “annoying.” It reacts to this situation by a variety of responses, the state of matters remaining “annoying” till by chance the right response gives the “satisfying” result. If the animal is again and again placed in the same situation, the number of the useless responses will become smaller and smaller, and the time before the right response is hit upon shorter and shorter, until finally the situation calls forth the right response at once, and the animal has learned to meet the situation. A “bond” has been established between the situation and the response in accordance with the laws of learning. At this point it is worth noting that the time which elapses between the presenting of the situation and the right response ought to show gradual diminution, not of course a mathematically regular reduction, but gradual on the whole, if Thorndike’s account of learning is true to the facts. And moreover this time control is one of the few objective controls of the learning process available. “By repeating the experience again and again,” Thorndike says, “the animal gradually comes to omit all the useless” responses and acts.<sup>2</sup>

But Thorndike describes some other characteristics of animal learning which may modify our criticism on this point, and which at any rate require to be noticed. There are five characteristics of learning which he calls secondary characteristics.

<sup>1</sup> Vol. II, p. 4.

<sup>2</sup> P. 9.



(1) Multiple response to the same situation. The principle of multiple response or varied reaction is not always present, but it is found in the majority of cases of animal learning.

(2) Set or attitude. This is a very difficult characteristic for the pure behaviourist to give any account of. It is of the nature of what Jennings has called "physiological state" <sup>1</sup> in the case of lower organisms. That is really all the behaviourist can say. "The chick," says Thorndike, "according to his age, hunger, vitality, sleepiness, and the like, may be in one or other attitude towards the external situation." <sup>2</sup>

(3) What Thorndike calls the Law of Partial Activity. The meaning is that a part or aspect of a situation may call forth a response, and may have responses bound to it, regardless of the other parts or elements in the situation.

(4) The Law of Assimilation or Analogy. "To situations which have no special original or acquired response of their own the response made will be that which by original or acquired nature is connected with some situation which they resemble." <sup>3</sup>

(5) The Principle of "Associative Shifting." "Any response of which a learner is capable" may be associated with "any situation to which he is sensitive," provided the learning proceeds by stages. <sup>4</sup>

Of these five characteristics the second is the only one which seems to have any direct bearing upon the time relations of the learning. Its tendency will be to make the time rather indefinite. We cannot entirely discount this in our examination of the facts of animal learning from the time point of view, but it is impossible to give any intelligible account of it in purely behaviourist (objective) terms, as will appear in what follows.

Thorndike closes his account of animal learning by saying: "These simple semi-mechanical phenomena—multiple response, the co-operation of the animal's set or attitude with

<sup>1</sup> *The Behaviour of Lower Organisms.* <sup>2</sup> Vol. II, p. 13. <sup>3</sup> P. 15. <sup>4</sup> P. 15.

the external situation, the predominant activity of parts or elements of a situation, the response to new situations as to situations most like them, and the shifting of a response from one situation to another by gradually changing a situation without disturbing the response to it—which animal learning discloses, are the fundamentals of human learning also. . . . No matter how subtle, complicated, and advanced a form of learning one has to explain, these simple facts—the selection of connections by use and satisfaction and their elimination by disuse and annoyance, multiple reaction, the mind's set as a condition, piecemeal activity of a situation, with prepotency of certain elements in determining the response, response by analogy, and shifting of bonds—will as a matter of fact still be the main, and perhaps the only, facts needed to explain it.”<sup>1</sup>

Before taking up the general questions involved, let us dispose of the question of time. In an article in the *Psychological Review* (vol. V.), Thorndike gives the times taken by a cat to escape from a box. They were (in seconds) 160, 30, 90, 60, 15, 28, 20, 30, 22, 11, 15, 20, 12, 10, 14, 8, 8, 5, 10, 8, 6, 6, 7. It is very doubtful whether we can take such a record as establishing the gradual nature of the process of learning in the way required by Thorndike's theory. It shows rather learning by fits and starts. The starting time is 160 seconds, but the second attempt gives 30, the fifth 15, the tenth 11, and the seventeenth 5. Stout indeed seems prepared to take Thorndike's view (*Manual*, p. 269), but see Hobhouse.<sup>2</sup>

And now for the general and central questions. How far is Thorndike's description of the process of learning psychologically sound? Do the three laws of Readiness, Exercise, and Effect cover all the facts? Is it possible to understand the process of establishing a bond between situation and response in a semi-mechanical, objective way? Does extreme

<sup>1</sup> P. 16.

<sup>2</sup> *Mind in Evolution*.

behaviourism really account for the observed phenomena? All these questions the writer should be prepared to answer in the negative. But the negative necessitates an appeal to introspective psychology.

The whole question hinges on the nature of the bond or connection between presented situation and response with resulting satisfaction. It will scarcely be denied that, whatever else there may be, there are psychical bonds, and that these are the only bonds for the existence of which we have a particle of real evidence. The employment of the terms "situation" and "response" really implies this. Apart from psychical bonds there are simply events, A, B, and C, without any connection whatsoever with one another. The connection between them is in and through experience, and can only be interpreted in and through experience. The nature of the connection, therefore, only an introspective study of experience can reveal, and in revealing the nature of the connection it will make the whole process intelligible.

Let us turn then to the experience aspect of the process. We have experience of situation A, and response-experience B, qualified by feeling of satisfaction C. Obviously no formation of bonds is required between B and C, if the one accompanies the other, but a bond must be formed between A and B, so that the presentation of situation A will in future lead to the response which gives the resulting experience B. The qualification of B by satisfaction cannot of itself effect this. The qualification must in some way affect experience A as well. In fact, in order that a bond may be established between A and B, B must be related to A in some way from the first. If there were no psychical relation between the two, no bond would ever be established, at least no bond of the kind involved in learning, though they succeeded one another constantly for a million years.

Moreover the mere following of one experience on the other is not sufficient to establish a psychical connection between

the two. The psychical relation cannot be explained as mere association, or rather association itself involves more than the mere contiguity of two experiences in time. There is a continuity in experience, resting upon a basis of conation, by means of which, and in which, the bond or connection is established, and, without this, contiguity could have no psychical meaning and no psychical existence. This is the explanation of the set or attitude, of which Thorndike speaks, of its effect on learning, and on the time relations of the learning process. The simple fact is that the process of learning, as described by Thorndike, is quite unintelligible. It is true that the learning happens, but how it happens is an absolute mystery, so far as any purely objective view of the facts is concerned. The process is not a quasi-mechanical process. No mechanical process bears the slightest resemblance to it.

Perhaps it will make the matter clearer if we consider the phenomena of learning in terms of the more familiar association rather than in terms of Thorndike's bonds and connections. Under what conditions will situation-experience or idea A be associated with behaviour-experience or idea B in such a way that the occurrence of A will immediately prompt to the kind of response which will bring B into consciousness, by suggesting B? We may assume—it does not really affect the argument—that initially A and B are brought together by pure chance. Initially there is nothing in experience A which will evoke the response in question; when learning is completed there is something in experience A which does evoke the response. In other words, association must have added some element or modification to experience A that was not present at the start.

But, if we can describe the whole course of events by saying that experience or idea A is followed by experience or idea B, it is quite impossible to understand how association can cause a modification in A, which is over and past before B comes



upon the scene. So far then apparently we have not got rid of our difficulty of explaining learning by abandoning our objective point of view, and talking in terms of experience rather than of behaviour. But the failure is only apparent. The difficulty remains only for an associationist psychology. It is certainly as difficult for ideas to associate themselves as for nervous processes or physical events to do so, if our "idea" is what associationists mean by that word, and if no other psychical factors are involved. But, in actual fact, experience is permeated through and through with conation, and it is conation which is the basal bond or connection between A and B. A and B are not separate and successive items in experience, but parts of one experience. Without the unity and continuity of interest, which conation involves, no learning would be possible, and it is this too which underlies and explains the satisfaction. In fine, it is impossible to explain learning or even to understand it, unless we seek to do so in terms of experience, and it is equally impossible to understand it in terms of experience, while we think only of cognitive elements of experience and their external association. The whole process rests upon a basis of conation.

Hence one might argue that a behaviourist psychology after all is alone capable of explaining learning either of animal or of man. That is true. But the behaviourism, which explains, is not a purely objective behaviourism like that of Thorndike, but a behaviourism relying on and utilizing the results of introspective psychology.

### EXPERIMENT AND FORMAL TRAINING

The experimental investigation of the phenomena and limits of transference of training, which includes the attempts to verify or disprove the doctrine of formal discipline, is the next topic falling to be considered. Again we may base our discussion on Thorndike. Thorndike's general conclusion

is expressed in the first paragraph of Chapter XVIII of his *Briefer Course*. It is as follows: "The bonds, whose strengthening and weakening constitute the changes in condition of mental functions in a man, are each utterly independent of the rest, but are related to form the obvious dynamic unity which the intellect, character, taste and skill of any one man displays. What happens to any one bond makes differences to other bonds in the same man that it does not make to those bonds in a different man. The amount of difference made ranges from cases where a change in one bond causes or constitutes an almost equal change in another to cases where the change in one produces approximately zero changes in the other. The nature of the difference made ranges from cases where the whole effect of the strengthening or weakening of one bond acts to produce a corresponding effect on another, to cases where the whole effect of its strengthening is to weaken, and of its weakening to strengthen, the other."

Thorndike uses the terms "facilitation" or "reinforcement" and "inhibition" to express the effect of one bond on another. Facilitation is produced when identical elements are involved, and in three different ways, by reorganization, by transferred attitude, and by transferred neglect. By the first he means the reorganizing of old bonds already established into the new bonds required; by the second the business-like method of procedure, and the confidence due to success, affecting other processes than the one in which these characteristics were acquired; by the third he means the disappearance of impeding or interfering conditions owing to their being weakened by neglect in other processes of learning where they are also felt as impediments. Inhibition is produced under precisely the same conditions, except that the second process demands activity of the bonds in an opposite direction, so to speak, from that required in the first.

We have already seen that learning itself cannot be

described in the way Thorndike describes it, as the establishing of certain particular bonds in a quasi-mechanical way. Apart from the bonds or associations themselves, learning involves a conational factor. Apart, therefore, from transference due to identity of associated elements, the phenomena which we take to prove transference might be due to an organization of conational factors of a kind quite different from the organization of associative bonds. This is at all events a possibility to be considered, and we shall return to it. In the meantime, let us consider the experimental evidence.

The originator of the experimental investigation of the doctrine of discipline was probably James. James cast doubts upon the possibility of improving the memory except by improving methods of memorizing, and set himself to prove his contention by an experiment in learning by heart conducted with himself as subject. The experiment was rather crude and it was invalidated by several circumstances, but the conclusions were given to the psychological world with all the authority which the word of James carried, and, if only for this reason, the experiment has more than merely historical value as a pioneer investigation.

A beginning was made of real scientific work on the problem with the researches of Thorndike and Woodworth, published in the *Psychological Review* in 1901. The object of the experiments was to determine the effect of training in certain functions on closely similar functions, training in estimating magnitudes on the estimation of magnitudes of the same general kind, training in estimating weights on ability to estimate weights of miscellaneous objects, training in cancellation of words containing certain letters on ability to pick out words containing other letters, wrongly spelt words, etc. The mode of conducting the experiment was by a test series, followed by a practice series, and ending with another test series. In most cases some improvement was

shown, but Thorndike interprets this as due, not to a mysterious transference of training, but simply to the functioning of identical elements.

Another important series of experiments was carried out by Coover and Angell.<sup>1</sup> In one experiment the training was in the discrimination of intensities of sound, the tests in the discrimination of shades of grey. In another case the training was in card-sorting, the tests in typewriter reactions. In both cases improvement was shown, though to a less extent in the second than in the first. The authors attributed this improvement mainly to improvement in method, and to the more economical adaptation of attention.

Fracker<sup>2</sup> carried out a still more elaborate series of experiments. The training was in the memorizing of the time order of four tones. The subjects were tested in (1) memory for poetry; (2) memory for the order of four shades of grey; (3) memory for the order of nine tones; (4) memory for the order of nine shades of grey; (5) memory for the order of nine geometrical figures; (6) memory for the order of nine numbers; and (7) memory for extent of arm movement. The results seemed to show transference of improvement, and in some cases the improvement in the test series was absolutely greater than the improvement in the practice series.

Bagley's suggestion that the apparent transference of habits is really a transference of ideals was experimentally tested by Ruediger.<sup>3</sup> The tests covered a period of eight weeks, and were carried out in three different schools. The results seemed to confirm Bagley's view. Emphasis on neatness in one subject, when accompanied by talks to the pupils about neatness, affected to a decided extent neatness in other subjects, but such an effect was lacking, where the whole procedure remained on the basis of habit. Ruger<sup>4</sup> carried out somewhat similar experiments with puzzles,

<sup>1</sup> *American Journ. of Psych.*, vol. XVIII.

<sup>2</sup> *Psych. Review, Monograph Supplement IX.*

<sup>3</sup> *Educational Review*, vol. XXXVI. <sup>4</sup> *Archives of Psychology*, No. 15.



coming to a similar conclusion. The development of a general "ideal of procedure"—though ideal in Bagley's sense is scarcely the word here—was found to exercise a marked influence in transferring ability from one puzzle to another. Such we may consider as the results of the chief American investigations. Ebert and Meumann<sup>1</sup> conducted an extensive series of experiments in Germany, with a view to verifying a theory which regards transference of training as due to a somewhat mysterious kind of "spreading" from one field of psychical activity to another. In the earlier experiments the subjects were tested as to memory for nonsense syllables, numbers, letters, monosyllabic nouns, Italian words, poetry, prose and visual signs. The training was in memorizing nonsense syllables. In later experiments two training periods were given, so that the whole experiment consisted of: Test series, training period, test series, training period, test series. A considerable amount of transference was found. For example, the memorizing of philosophical prose was improved to the extent of 70 per cent. of visual signs to the extent of 55 per cent. The investigators concluded that several factors combine to produce the transference. There is an increased power of attention, an increased efficiency of voluntary effort, and an improved technique. But, over and above these, there is a sympathetic development of allied memory functions—a real formal discipline. Some critics, however, have maintained that what Ebert and Meumann consider the auxiliary factors are in themselves sufficient to explain the results.

The investigations of Ebert and Meumann were defective on the technical side, and the same is true of some others of the investigations described. They had no control experiments. All the subjects were tested at the beginning, all underwent the training, and all were tested at the end. In order to be certain of our results in any experiment of this kind, we must have a control experiment, where the

<sup>1</sup> *Archiv für die gesamte Psych.*, IV.

subjects differ only in the circumstance, the results of which we wish to determine, from the subjects in our experiment proper. One of the first experimenters to take this very necessary precaution was Winch,<sup>1</sup> and all similar experiments are now conducted on the basis of his method of parallel groups. In several instances the use of this method has strikingly justified itself. It has been shown, for example, that both the practised and the unpractised groups may exhibit improvement in the second test, and in some cases the unpractised group has shown a greater improvement than the practised group, which apparently indicates a slight inhibitory effect as the result of the special training. Hence it is only by a comparison of practised and unpractised groups that improvement as a result of the practice, or its absence, can be clearly shown.

Winch's first experiments were carried out with memory tests. First of all he divided his subjects into two equal groups by a memory test involving the memorizing of continuous prose. One group was then practised in the learning of poetry, while the other group did arithmetic work. Then a test in learning prose was given again. Both groups showed improvement, but the practised to a markedly greater extent. Hence Winch inferred transference. He has subsequently carried out similar experiments with other functions, notably with fundamental arithmetical processes and arithmetical problems, obtaining the same kind of result.

Before leaving this topic it is necessary to refer to the experimental investigation of what is usually called "cross education." The chief experiments in this field have been those carried out at Yale by and under the direction of Scripture.<sup>2</sup> The first experiments were with a steadiness tester. The left hand was tested first, and 50 per cent. "correct" trials were recorded. The right hand was then practised for ten days. When the left hand was again tested

<sup>1</sup> *Brit. Journ. of Psychology*, vol. II.

<sup>2</sup> *Studies from the Yale Psych. Lab.*

76 per cent. "correct" attempts were recorded. Scripture suggests that the explanation is to be sought primarily in a training of attention rather than in a transference of skill in adjustment. There are other results of similar experiments, however, to which this explanation scarcely applies. Experiments on increase of muscular power showed steady increase in the practised hand as a result of practice, and also in the unpractised hand. Experiments in rate of tapping gave similar results, as did experiments in aiming. Only the last of these can be explained on the basis suggested by Scripture. Other investigators have found the effect of practice transferred from one finger to another, that increase in fineness of tactual discrimination in the finger-tips of the right hand, due to practice, is accompanied by an increase in fineness of discrimination in the finger-tips of the left hand, that increase in sensitivity to sound stimuli is accompanied by increase in sensitivity to visual, gustatory, olfactory, and tactual stimuli. Finally, Wallin<sup>1</sup> found that practice with one eye in illusions of reversible perspective affected also the unpractised eye, and that practice effects are transferred from the fovea to the retinal periphery.

Such are the main facts which have been revealed by experiment. What conclusions are we to draw? It is difficult to avoid the conviction that no single and simple explanation will cover all the facts, unless it is at the same time couched in terms so indefinite as to be utterly useless for practical purposes. We may ascribe the transference to the functioning of identical elements, but what are the identical elements? Certainly not bonds or connections, as Thorndike understands them, in every instance. If we arrange the experimental investigations undertaken in an ascending series, as regards the complexity and psychical elaboration of the processes studied, then at both ends of the series, at least, there are cases of transference, to which the notion of identity of

<sup>1</sup> *Journal of Educational Psychology*, 1910.

bonds cannot be applied, unless we interpret "bonds" in a way wholly different from Thorndike's interpretation. The net result of the experimental work hitherto has been to enable us now to substitute for our uncritical idea of formal discipline several more or less definite scientific principles, as an explanation of certain facts of experience, which have themselves been confirmed rather than overthrown by experimental investigation.

As far as the fixing in of definite responses and of certain associative bonds is concerned, we have to do with a process which we may call "training," which is specific to the bonds involved. But, seeing that the "training" may be in methods which are more or less general, and in the conscious application of such methods to problems of the most diverse kinds, even "training" may take on a form, which, to the superficial observer, at least, is general. Over and above this "training" there may be an organization of active tendencies as interests, emotions, sentiments, and ideals, contributing, with their organization, to the initiative, resourcefulness, and power of the personality, which effect we may designate "discipline." In this instance the opposition between specific and general is largely meaningless. Whether we should include this second effect under learning or not, it must certainly be included under education, and it is often a contributory cause to the effect which we find produced as a result of a process of learning.

#### REFERENCES FOR FURTHER READING

1. LAURIE: *The Institutes of Education*. Oliver and Boyd.
2. BAGLEY: *The Educative Process*. Macmillan.
3. COLVIN: *The Learning Process*. Macmillan.
4. THORNDIKE: *Educational Psychology*. Columbia University Press.
5. HECK: *Mental Discipline and Educational Values*.



## CHAPTER X

### SENSE, IMAGINATION AND THOUGHT

THE outcome of our discussion of discipline and training necessitates a reinterpretation of various immediate aims of school work, upon which much stress has been laid in the past—as, for example, sense training, the cultivation of the imagination, teaching the child to think. The psychologist who simply shrugs his shoulders, and says these things are impossible, at least in the sense the teacher intends them, is not very helpful, and not very scientific. For, after all, the teacher is trying to do these things, and is actually doing something. What that something is has a psychological, no less than an educational, interest.

It must be recognized at the outset that, in speaking of “sense training,” the “cultivation of the imagination,” the “training of thought,” we are adopting the standpoint, and using the terminology, of an older psychology, a psychology which among other characteristics regarded the study of consciousness as its sharply defined province. This older psychology, for educational purposes at least, has been superseded by a behaviourist psychology. Hence the processes designated “sense training,” and the rest, must be examined from a new point of view. This implies that we must consider them with reference to the response or behaviour of the organism, as playing a part in that behaviour, and possibly as a phase of behaviour. While doing so, however, we must not forget that conscious processes are involved, or close our eyes to the fact that the muscular

and glandular activity, which we can observe objectively, may be only one aspect of the behaviour. From the extreme behaviourist point of view to speak of training or cultivating sense or imagination is, of course, meaningless. Nevertheless both sense and imagination play a part in the response of the living organism at the higher levels, and whether we speak of training and cultivating or not, the part they play can undoubtedly be affected by school education.

It is also of fundamental importance to recognize that in sense, imagination, and thought, from the behaviourist point of view, we are concerned with one great function of the living organism—what we may call “psychical adaptation,” or “thinking” in a wide sense. The emphasis is on “psychical.” Physical or physiological adaptation, including glandular and muscular activity, can, with the necessary instrumentation, be directly observed and recorded by the external observer. The results alone of psychical adaptation can be so observed. From these results we cannot differentiate between sense, imagination, and thought, that is, without the aid of a direct inner knowledge applied inferentially. It is true that sense, imagination, and thought, as phases of behaviour, are accompanied by muscular and glandular activity, and that, with the necessary instrumentation, this muscular and glandular activity could be observed and recorded. But here again there is nothing in the objective record which will enable us to differentiate between the three processes. The failure of an extreme behaviourism at this point is manifest.

As in sense, imagination, and thought, we have on the physiological side the same glandular and muscular activities, so, on the psychical side, we have the same psychical function. There is a difference of level, not of function. In virtue of this difference of level, that integration which belongs to conscious process has a wider range. Even while refusing to accept the contentions of the extreme behaviourist, the

psychologist cannot admit that the essence of psychical adaptation changes as we pass from the lower to the higher levels, because of the emergence of a mysterious something, which from its nature is beyond the ken of science. All life is mystery. All behaviour is mystery. Gravitation no less is a mystery, when we seek an ultimate explanation. But accepting the presence of mystery throughout, the psychologist must, nevertheless, carry his provisional explanation of the facts as far as it will go. He will, therefore, rightly refuse to admit that in imagination he must find a new mystery, that is not in sense, and in thinking a new mystery, that is not in imagination, and in both cases a mystery different from any mystery previously present. No science of psychology, or any other science, is possible except on this basis. So far the contentions even of the extreme behaviourist are valid.

### SENSE TRAINING

If we limit ourselves to a purely objective standpoint, we are not entitled to speak of senses at all, but of photo-reception, phono-reception, and the like, with end-organs, photo-receptors, phono-receptors, and not sense-organs. Even at that, education might be concerned in raising the question whether the reception of stimulus from the outer world might not be made more efficient by a definite procedure in the school. In other words, the problem of sense-training in a narrow sense would still exist as a problem for the psychology of education.

This narrow problem of sense training we may consider first. Can we by stimulation, systematically arranged, develop the sense organs? The only answer we can give is that it is extremely doubtful. There is some slight evidence, both positive and negative, in favour of the view that we can, but it is by no means unambiguous. So many

of the facts cited in its support can be explained on another basis, that we hesitate to admit that there are any facts which cannot. Thus, the *sensory training* of Dr. Montessori was at first regarded by many of her disciples, and, judging from her early book, *The Montessori Method*, by herself, as dependent on a physiological development of sense organ or sensory area brought about by the educational methods employed. But it is clear that such an assumption is quite unnecessary to account for the facts. There is normally a development through special training of special powers of discrimination with reference to special sense material. And that is sufficient to account for the facts, and for numerous facts of a similar kind in practical life.

That this development of special discrimination in sense material is the main result of Montessori practice does not admit of a doubt, and it is also the educationally significant result. In her later work, *The Advanced Montessori Method*, Dr. Montessori has apparently come to the same conclusion, for she says: "A sensory stimulus which might before have passed unobserved . . . is vividly perceived."<sup>1</sup> And again: "By means of our so-called 'sensory exercises' we make it possible for the child to *distinguish* and to *classify*"<sup>2</sup>; and yet again: "The material for the education of the senses lends itself to the purpose of distinguishing between these things."<sup>3</sup>

We can safely leave the question of the physiological development of the sense organs undetermined. The important thing is that through sensory experience sensory discrimination is developed. On the behaviour side discrimination implies differentiation of response, and differentiation implies the possibility of correspondingly complex and efficient organization of behaviour.

Whether the facts warrant the adoption of Dr. Montessori's

<sup>1</sup> *The Advanced Montessori Method*, I, p. 200.

<sup>2</sup> *Op. cit.*, p. 203; italics hers. <sup>3</sup> *Op. cit.*, p. 204.



method of "sensory gymnastics" is a further question, which cannot be decided until we have considered some of the wider bearings of sensory experience. In a very real sense all the inner mental life is based upon sense perception, as all the organized and complex behaviour of the educated adult grows out of the simple responses to the sensory environment. Herein lies the true significance of sense training. So far as the child's sensory experience falls short of adequacy from this point of view, so far will he be placed at a permanent disadvantage in adult life, a disadvantage that will count for more or less, as far as practical efficiency is concerned, according to the extent to which typical and essential elements are wanting, but will always be sufficiently serious as regards the completeness and satisfyingness of the inner life, provided the deficiency is at all marked.

We have here the key to the educational significance of sensory defects, more especially those of sight and hearing. Their correction, removal, or compensation is imperatively necessary. Who that has read of Helen Keller's "intense longing to *touch* the mighty sea and *feel* its roar" <sup>1</sup> can fail to realize the necessity of making such provision as we can to secure for the child such efficiency as can be secured in the reception of sense stimuli? If the physiological development of the senses through training can make even the slightest contribution in this direction, then it would have justified itself. But there is little evidence that it can. At any rate, we ordinarily place our confidence rather in the resources which medical science has made available.

The correction of sensory defects does not, therefore, properly fall under sense training, except perhaps as a preliminary condition. The physiological development of the receptor organs is a possible, though scarce probable, result, and of minor importance. The development of discrimination in sense material, and the differentiation of

<sup>1</sup> *The Miracle of a Life*, p. 70.

response towards such material, is a real and valuable result. But the great aim and function is the giving of the child necessary and typical perceptual experience, the correcting, supplementing, and systematizing of the unsystematic sense experience of his everyday life. Striking results have been obtained by several investigators of the nature and range of the child's sensory experience at the beginning of school life, all pointing to the great need for sense training with this aim and function.

The best known of such investigation is that carried out by Stanley Hall at Boston in 1880, and first reported in the *Princeton Review* of May, 1883. His object was to determine the contents of the minds of children of normal intelligence at the time of commencing school. He found an amount of ignorance displayed, which would be surprising to most people. "Skeins and spools of thread were said to grow on the sheep's back, or on bushes, stockings on trees, butter to come from buttercups, flour to be made of beans, oats to grow on oaks, bread to be swelled yeast, trees to be stuck in the ground by God and to be rootless, meat to be dug from the ground, and potatoes to be picked from trees. Cheese is squeezed butter, the cow says 'bow-wow,' the pig purrs or burrows, worms are not distinguished from snakes."<sup>1</sup> Other similar investigations have been reported by Bartholomai (Berlin), Lange (Plauen), Hartmann (Anna-berg), Olsen (Vardo), Meumann (Munich). All have got the same general results, and these results throw into bold relief the inadequate nature of the child's perceptual experience.

All will agree that the meagre, vague, and incomplete sense experience of the child, which the results of these investigations reveal, must be supplemented and corrected by the school. But the exact way in which remedies are to be applied is not so clear. One thing, however, is clear.

<sup>1</sup> Stanley Hall: *Aspects of Child Life and Education*, quoted by Colvin, *Learning Process*, p. 84.

That is that the mere presentation of sensory stimuli to the child does not in any way meet the needs of the case. This involves merely the reception of the stimulus, and if the child's response is to end there, the educational value is nil. Nor is it much greater, if the only response is the word response in naming. There must be activity with reference to the sense stimulus—self-expression, if you will—if the end of sense training is to be attained. In this respect the Montessori method is without question on the right lines. On the other hand, "sensory gymnastics" would seem to convey the suggestion that we should seek to develop sensory discrimination for its own sake, and apart from any real response to a real world. Such "sensory gymnastics," at its best, can have but a limited value. It may be necessary to supplement such sense training as the child can obtain by contact with things of the real world having a real appeal to him. But, in view of the fundamental position which sense experience occupies in the mental life, this last must be regarded as the chief means of sense training.

### IDEAL REPRESENTATION

Ideal representation or imagination represents, as we have already seen, the second level of mental development. "Ideal representation" is the more correct term, but "imagination" is the term more generally used. We shall employ the two indifferently, as a rule, except where one or other is preferred for a special reason given.

There is no topic in the psychology of the educational process, about which there has been more confused, and to a great extent useless, theorizing, than the imagination. The idea seems to have got abroad that imagination is a very fine thing, and that it is sufficient, as a plea for any and every sort of educational procedure, to say that its purpose and effect is the stimulation and cultivation of

the imagination. The plea is usually put forward without any attempt to determine what the imagination is, as a piece of psychological "running machinery," what its cultivation means or implies psychologically, or what end its cultivation subserves. The greater part of the confusion would disappear, if we could start with a definite idea of what imagination is, and of the various forms which imaginative activity may take in the human being. It might then be possible to say of this or that subject or method that it had the effect of stimulating this or that form of imaginative activity, as well as the end for which, and the extent to which, it was desirable to stimulate imaginative activity in this or that way.

Our first business, therefore, is to give some account of ideal representation or imagination itself. First of all it must be noted that these are merely names given to conscious process when, and so far as, the organism is active in a certain definite way, and do not designate a certain entity, the producing cause of certain phenomena of the inner life. At this time of day there is no need to dwell on such a point. The conscious process is imagination, when the mental content is an image or complex of imagery. An image may be defined as our apprehension of an object or objects, in the absence of the object or objects themselves which originally determined our sense perception.

We consciously apprehend an object of any kind in the absence of the object itself by means of an image of the object, or at any rate an image that stands for it, as, for example, an image of the word that names it. By means of this image we are saved the necessity of obtaining an actual sense experience of the object, and can deal satisfactorily with the situation with which we are faced on the basis of the image—more satisfactorily, it may be, than if we had the actual percept. When our aim is simply to recall an object to mind, all that is necessary is to get an image



as complete and accurate as possible. On the other hand, we may think of an object in a context of meaning, when the meaning is the important thing, and the image is merely a peg, as it were, upon which to hang it. In such a case all that is necessary is a schematic, or, it may be, even symbolical or verbal, image. We may distinguish these two cases as imagination and thought, but ideal representation is normally involved in both.

In popular usage the term "imagine" is somewhat more restricted in its application than the term "image." We do not ordinarily say "imagine" of a simple object or sense element, but rather of a more or less complex whole, or a more or less continuous process, whether real or fictitious.

The precise relation of the image to sensory experience is somewhat difficult to determine. In very many cases the image undoubtedly involves the same motor adjustments in connection with the sense organs as the sensory experience involves, though not to the same extent, nor usually with the same degree of intensity of sensation. Whether it involves "centrifugal" stimulation of the sense organs, or sensory areas, is more doubtful. It differs from the sense percept, however, in that the object ideally represented has not got what might be called "sensational character." It is experienced as *not* present to the senses. We need not here pause to inquire whether it is not possible further to analyse this characteristic. It is at any rate a characteristic with which we are all familiar. On the response side this appears as an inhibiting of overt action. Total inhibition there is not. The necessary motor adjustments are initiated, but go no further. There is "implicit," as contrasted with "explicit," motor adaptation, to use Watson's terminology. We may put it generally that "percept" and "image" correspond on the inner side to "explicit" and "implicit" adjustment, in the total response of the organism to a situation.

We are now in a position to consider the forms which ideal representation may take. The distinctions which emerge are all important psychologically, but educationally some are much more important than others. In the first place ideal representation is either reproductive or constructive. When our aim is to reinstate past experience as it was experienced, the ideal representation is of the first kind; when we aim at building up with the elements of our past experience an experience that is, as a whole, essentially new to us, the ideal representation is of the second kind. In popular speech we should distinguish these as memory and imagination respectively.

In the second place, turning to constructive ideal representation—or perhaps here it would be better to say imagination—we find another distinction emerging. The imaginative activity of the reader reading a work of fiction is constructive; so also was that of the author who wrote the work in question. Whereas, in the reader's case, the constructive activity is receptive and imitative, following, and depending upon, clues supplied to it from without, in the author's case it is what we should rather call creative. Thus we have two modes of constructive activity, imitative and creative.

Both these distinctions are fairly familiar, and are not unimportant in education. But we now come, in the third place, to a distinction which has been too often overlooked, and which is of very great significance. The constructive activity which projects and designs a great bridge or canal, which formulates a new mathematical principle, or an epoch-making scientific hypothesis, can obviously be distinguished from the constructive activity which produces a great poem, novel, or work of art, and the distinction is one which cuts deep into our whole intellectual life. The distinction we can best express by calling the one kind of activity "pragmatic," and the other "æsthetic." It is failure to keep this distinction clearly before us that has been one of the main

sources of our confused thinking regarding imagination in education.

The characteristic marks of pragmatic imagination are two : 1. Objective control, or the feeling of objective control, is an essential feature of the inner attitude throughout. Whatever the particular end towards which the imaginative activity is directed, it always involves congruity with the conditions of real existence, which are conditions independent of the individual, to which his activity must adapt itself.

2. Following from this, the activity itself, however much pleasure it may yield the individual in the process, always derives its main value and significance from the result to be achieved.

On the other hand, the characteristic marks of æsthetic imagination are :—

1. The constructive activity is essentially free. Consistency and congruity with certain conditions may be demanded, in order that the aim or aims may be attained, but the conditions are in general self-imposed, and are felt to be self-imposed—conditions of a world which the Self creates.

2. The activity has as its end the emotional satisfaction which it yields. Its value is thus in itself, and is independent of any system of objective values. We shall have occasion to return to this point in the next section.

Both pragmatic and æsthetic imagination fall into further subdivisions. Pragmatic imagination may be either theoretical or practical, according as its immediate aim is understanding or action. The first is exemplified in mathematics, science, philosophy ; the second, in the affairs of practical life and work. In the same way, æsthetic imagination may be artistic, or “fantastic,” that is, mere play of fancy or phantasy, as in day-dreaming. The imaginative activity which issues in the formation of ideals occupies a unique position, in that it shares in the charac-

teristics, at different stages, of both æsthetic and pragmatic.

Whatever else the cultivation of imagination may mean, and apart from the considerations that arise in connection with the imaginary world of the child, the cultivation of imagination necessarily involves the cultivation of imagery, and the presumption is that this, if it is possible, is an educational end of some value. It can easily be shown how, and in what sense, cultivation is possible. Images may be classified into concrete images, and verbal (or symbolic) images. Experimentalists<sup>1</sup> who have studied the imagery of children have been impressed by the wonderfully vivid and detailed concrete images which were revealed. In this respect the imagination of the child is as a rule greatly superior to that of the ordinary educated adult. That is to say, with education and intellectual development, there is decline in the vividness and concreteness of imagery. The decline is explained partly by the fact that with the development of abstract thought the concrete image becomes less and less suitable as a vehicle for carrying the meaning, and partly by the prevailing bookishness of our school education. Thus we have verbal and symbolic imagery tending to take the place of concrete. The tendency is a natural and to some extent inevitable tendency. But the question may be raised, whether it is wholly desirable to permit the change to take place, to the extent to which it normally does take place. The function of the image is to make past experience available for present use, and to some extent to define the future event beforehand. For this function concrete imagery in many cases has advantages not possessed by verbal imagery. It has vividness and detail, both of which may contribute to the kind of clearness of thought required at a particular juncture. Concrete imagery may impede the more abstract thought processes, but a great part of our ordinary thinking scarcely belongs

<sup>1</sup> For example, see article by Rusk in *Brit. Journ. of Psych.*, vol. III.



to that category. It would seem, therefore, that if possible—and some experimental work is desirable at this point—concrete imagery should be maintained alongside of verbal and symbolic imagery. Suitable instruments are at hand in our school curriculum in such subjects as history, literature, geography, nature study, drawing, manual work.

### THE PROBLEM OF THE ÆSTHETIC IMAGINATION

The main educational problems of the imagination centre round the question of the place to be assigned to æsthetic imagination. There can be no controversy regarding the place to be assigned to the pragmatic imagination. It is perfectly clear that for an efficient and useful life in the world of men and things, the pragmatic is the most important and essential form of imaginative activity, even when we are disposed to assign the highest possible value to the æsthetic. In the formulation of ends, in the conscious utilizing of past experience in order to discover means, in the arrangement of means and mode of procedure for the attainment of ends, in the extension of the limits of our concrete experience beyond the possibilities of direct sense perception, we are dependent on the pragmatic form of imaginative activity. Life cannot help seeing to the cultivation of this pragmatic imagination, though the outcome may sometimes be—speaking figuratively—deformed, lame, or blind of an eye. Though there is no controversy about the matter, it would be well if the teacher and the school would do more consciously to guide and direct this very important process in education.

On the other hand, to such an extent have controversies long raged around the æsthetic imagination, that there is little chance of its being forgotten. In recent years particular attention has been given to that sub-type which we call “phantasy,” and there is just a little danger at the

present time, lest the whole problem of the place of æsthetic imagination should be settled on the basis on which a decision is reached regarding phantasy. Phantasy has become particularly important from the psychoanalytic point of view. As in dreams, the psychoanalyst reads in phantasy the manifestations of unconscious tendencies or "wishes." He finds that it often takes on a pathological character, representing the way in which an individual seeks to escape the disagreeable necessity of facing reality. Hence he tends to adopt a somewhat deprecatory attitude towards phantasy as such, and more often than not carries over this attitude to æsthetic imagination at large.

Education can derive nothing but benefit from the researches of the psychoanalyst at this point, provided we hold fast to the facts, and have a clear conception of their significance. All phantasy cannot be regarded as pathological. It is true there is always in phantasy "wish fulfilment," with the subjection of the "Reality Principle" to the "Pleasure Principle." But phantasy is as natural to the child as breathing. The pathological character does not inhere in it as such, but only supervenes when phantasy becomes a means of escape from a reality that must be faced. We have in fact here the question of appetite and interest over again. While to regard all phantasy as morbid is unjustifiable and unscientific, at the same time there is no sense in closing our eyes to its dangers. Especially should we be watchful when there is any suspicion of "regression" in the phantasy.

A similar tendency to lay chief stress on phantasy shows itself in Dr. Montessori's attitude towards æsthetic imagination. Dr. Montessori's is one of the most important discussions of the educational significance of imagination in recent years. In several respects her opinions show an almost surprising agreement with those of the psychoanalysts, but her thought develops on entirely different lines. The

exuberant imaginative activity of the child is taken as a mark of immaturity, a characteristic in which the child mind resembles the mind of the primitive savage. Its most characteristic products are evidence of poverty, not of wealth. "An adult resigns himself to his lot, a child creates an illusion. But this is not a proof of imagination, it is a proof of an unsatisfied desire; it is a manifestation of conscious, sensitive poverty."<sup>1</sup> That being so, we cannot educate the child by intensifying and developing this kind of imaginative activity. "No one, we may be sure, will say that in order to educate a rich child we should take away his pony and give him a stick. . . . If a poor man, a beggar, had nothing but dry bread to eat, and if he placed himself by the grated window of a rich underground kitchen because when he smelt its savoury odours he imagined himself to be eating excellent dishes together with his bread, who could prevent him? But no one would say that in order to develop the imaginative activity of the fortunate persons for whom the actual dishes were destined, it would be well to take away their meat and give them bread and fragrance."<sup>2</sup>

So far few would dispute Dr. Montessori's contentions. She goes on to argue that the encouragement of fantastic ideas in children by myth and fairy tale tends merely to perpetuate that credulity, which is a natural enough trait in the child, but at the same time is a trait which we expect to disappear as he develops, and in the adult is regarded as a defect of intelligence. "Is this illusory imagination, based upon credulity, a thing we ought 'to develop' in children? We certainly have no wish to see it persist; in fact when we are told that a child 'no longer believes in fairy tales,' we rejoice. We say then: 'He is no longer a baby.' This is what *should* happen, and we await it: the

<sup>1</sup> *The Advanced Montessori Method*, p. 257.

<sup>2</sup> *Op. cit.*, p. 257.

day will come when we will no longer believe these stories.”<sup>1</sup> Most of this also we may concede without committing ourselves to the rejection of the myth and fairy tale as educational instruments, which Dr. Montessori urges.

Her rhapsody on the achievements of science, with which the chapter on the “Imagination” commences, furnishes us with the key to her whole attitude. “Rhapsody” is the only suitable word. “Modern man,” she says, “by the method of positive science seems to have found the secret trace of thought which puts him in the divine path, which gives him the revelation of his true nature, as indicated in the words of Scripture: ‘Let us make man in our image and likeness.’”<sup>2</sup> Or again: “In this manner man seems to reflect divine attributes; the marvellous and miraculous issue from him in such grandiose form that the man of the past, the wren without the eagle, could not even have conceived.”<sup>3</sup> Or yet again: “Thus positive science represents to us the ‘redemption’ of thought; its purification from original sin, a return to the *natural laws* of psychical energy. Scientists are like those men of the Bible story who, after Israel had come out of Egypt, were permitted to explore the Land of Promise and who came back with such a large cluster of grapes that it took two men to carry it, and the people saw it with amazement,”<sup>4</sup> One feels tempted to retort in the same strain with Bunyan’s *Man with the Muck Rake*, and the one who stood over his head “with a celestial crown in his hand, and proffered him that crown for his muck rake; but the man did neither look up nor regard, but raked to himself the straws, the small sticks, and dust of the floor.”<sup>5</sup>

All this, however, is little to the purpose. The conclusion which Dr. Montessori reaches is that imaginative activity must be based upon truth and reality, which truth and reality

<sup>1</sup> *The Advanced Montessori Method*, p. 262.    <sup>2</sup> p. 242.    <sup>3</sup> p. 242.

<sup>4</sup> *Op. cit.*, p. 243.

<sup>5</sup> *The Pilgrim’s Progress*, Second Part.



she finds in positive science, that the artistic imagination is so based, but that myth and fairy tale are the very antipodes of positive science. The argument would really lead to the denial of educational value to all æsthetic imagination, and the educational recognition of pragmatic imagination alone. Her recognition of artistic imagination shows that she is not prepared to carry the argument to this logical conclusion. The view cannot be accepted. Positive science is altogether too narrow a basis for artistic imagination, or as a measure of truth and reality. Æsthetic imagination as phantasy corresponds to a real need of the child's inner life. Without it there could be no artistic imagination. Moreover the idealistic imagination too draws its material from the same source. Positive science knows only facts; ideals are wholly beyond its range, and beyond its comprehension. On the other hand, so far as Dr. Montessori's argument is a plea for a widening of the sense experience of the child, it must be accepted.

To sum up. A possible attitude towards the child's world of fancy is discouragement and repression, rather than cultivation through myth, fairy tale, play, and the like, on the plea that this tendency in the child is normally strong enough, or even too strong, that it tends to put the child more and more out of touch with his environment in the world of fact, and to impede his intellectual development. The answer is that to repress the child in this respect is to cut him off from the language which Homer, Dante, and Shakespeare speak, and to shut him out from the world of ideals and truth and beauty. Against extreme views the answer is conclusive. At the same time it does not solve the difficulty of meeting the very real dangers which threaten the imaginative child. The principles, however, upon which a solution must be based seem clear. Conformity to a world of solid and definite fact is at least as essential as the development of an ideal world. Hence, if we employ

myth, fairy tale, and the like in the education of the child, as we must do, we must also find a corrective against the possible dangers arising from over-stimulation of imaginative activity in this way. The corrective we can find by giving up another, and fairly considerable, part of the child's school time to work which is exact, definite, and real—work, which, while interesting the child, will not permit any play of the fancy. The Montessori occupations, or the type of education which Dr. Montessori advocates, may be cited as an example, or even, in lack of anything better, the multiplication table. Again at this point, however, there is crying need for definite observation and experiment.

### THE HIGHER PROCESSES

In passing to the consideration of the higher intellectual processes, it may be well to reiterate what we previously said regarding the identity of function throughout in perception, ideal representation, and thought proper. In each case we are concerned with psychical adaptation, or thinking in the wide sense. That takes place at distinct levels, differentiated from one another by the scope or range of psychical integration that is possible. At the highest level the range becomes practically unlimited. It becomes unlimited, because it is no longer bound down to the particular and concrete, and it is no longer bound down to the particular and concrete, because of the possibility of apprehending qualities, aspects, and relations, apart from the concrete situation in which they are manifested.

It is not quite so easy to make the difference clear in behaviourist terms. The higher processes are based upon identical elements in response. These identical elements have become separable from the particular concrete reaction-patterns, of which they are partial constituents, and as a result new,

more comprehensive, and more complex reaction-patterns become possible. But this new development cannot become actual without some instrument, by which the isolation of partial constituents of reaction-patterns may be facilitated, and the partial constituents themselves, as isolated, be, as it were, fixated. This instrument is supplied by language. Language is described by Stout as the great "instrument of conceptual analysis and synthesis." The description fits from the behaviourist, as from the introspectionist, point of view.

The account given of language by the extreme behaviourist reveals at once the strength and the weakness of his psychology. The acquiring of language, he says, differs in no essential respect from the acquiring of any other motor habit. The child has a certain measure of vocal equipment and endowment at birth. On the basis of this, partly in consequence of normal growth and development, but mainly as a result of imitation, he builds up a complex set of motor habits involving the employment of the vocal organs, and later the use of arm, hand, and fingers, with some writing instrument. The vocal habits become language first by association and then by substitution. It is at this point that the account becomes psychologically and educationally interesting. How do the association and substitution take place? As regards its main features, the process is probably somewhat as follows: As long as the child has to be, and is, continually waited upon, there is little need for the development of any language system. But as soon as he is able to move himself about, and come into contact with a more complex environment, and at the same time is being more and more left to acquire a mastery over that environment for himself, the need for "short-circuiting" his reactions, as Watson puts it, appears, and language is the means adopted.

The actual sounds employed as language will be determined in the main by the child's social environment. These sounds,

we have been in the habit of saying, become associated in the child's mind with certain objects and experiences. The behaviourist would say rather that the motor activity involved in making the sounds becomes associated with the motor responses to objects and situations which he has already established. The vocal response is an additional motor response which the child learns to make, for which he very quickly finds a definite use. Let us suppose a concrete case. The child on seeing a ball in his vicinity, has learned to go to it, grasp it, and roll it on the floor—also to articulate the word "ball." He says "ball," as he runs to it, as he grasps it, as he rolls it. Some day he sees the ball, but it is in a place where he can't get it. The normal reaction of running to it is blocked. Nevertheless he says "ball," and possibly keeps saying "ball," until some one hands the ball to him, when the series of reactions goes on as before. He has now learned that he can substitute the speaking of the word "ball" for the motor activity involved in going to fetch it, and he gets some one to fetch it for him. Not unnaturally he exploits this new-found power on a considerable scale. Thus he has learned, not merely to associate the making of a sound with the usual direct motor response, but to substitute the vocal activity for the direct motor activity. He has begun to acquire language, and every subsequent step he takes is nothing more than a natural development out of the step already taken.

And now we come to the crucial question for the behaviourist psychology of language, the answer to which may radically affect our whole attitude towards language teaching in the school. What is the relation of language, regarded as a complex system of motor habits, to thought? The question can only be answered after the nature of thought, or rather thinking, as a mode of behaviour, has been determined. The account which the extreme behaviourist gives of thinking is at first startling in its novelty and its simplicity.



Thinking, he says, is nothing but implicit motor or glandular activity, and in particular systematic thinking is nothing but the implicit activity of language mechanisms. Many individuals, he points out, when we closely observe them reading or thinking, will be found to be moving their lips quite distinctly—so distinctly in fact that a practised lip reader can make out much of what they are whispering to themselves, for that is what it really amounts to. With most educated readers the lip movements tend to disappear, but nearly all remain quite conscious of the inner speech. This inner speech is implicit. Whispered speech is, as it were, the half-way house. In essence implicit motor activity, and inner speech as a particular case, is still bodily movement, suppressed, inhibited, “short-circuited” in all kinds of ways, but not transformed into a mysterious something, which is not bodily movement any longer.

All this behaviourist psychology of language and thought is valuable and educationally important. It is true it does not, as we have already seen, enable us to differentiate between the higher and lower levels of thinking. It does not even enlighten us, save only in a very partial way, as to what thinking is. For it is quite impossible to accept the identification of thinking as a conscious process with the motor and glandular activity, implicit or explicit, which constitute with it the total behaviour. Such enlightenment only a wider behaviourism, which takes account of conscious process, can give. On the other hand, it indicates the true relationship between thinking and motor or glandular activity—or in the particular case language—and in doing so brings into prominence the true position of thought and motor activity relative to one another in the education of the child. It justly emphasizes the fact that thinking is not something apart from acting, that, even at its highest development, it is merely a phase of acting.

While it is essential that we keep in mind the continuity

of thinking with overt action, and of the higher levels of thought with the lower, it is not less essential that we should be awake to the fact that thinking is not motor activity, and that conceptual process is not ideal representation. We may describe the external behaviour of the human being without mention of conceptual process, but we cannot *understand* the behaviour on that basis. And we are not any nearer understanding it by the substitution of implicit for explicit motor activity, or language for thought. If we think we are we merely delude ourselves.

Let us turn then to the direct observation of conceptual process. To keep the discussion as nearly as possible to the line followed by the behaviourist discussion of language we may adhere to an illustration already employed, that of reading. Let us suppose that the child has "read in to himself" a paragraph. There may or may not have been lip movements indicative of whispering. That is a matter of total indifference when we set out to determine whether the child has understood what he has read, and the degree of the understanding. We proceed to ask the child to give the meaning of what has been read. We test in this way the kind of conceptual whole he has obtained from the paragraph, and his understanding of the relations between the elements in that conceptual whole. His understanding of the thought depends on his following of the thought both analytically and synthetically. This is what we ordinarily mean when we speak of understanding anything. We understand a sentence or paragraph, when it conveys to us the conceptual whole, or idea, which the speaker or writer wishes to convey. We understand a complex object when we see at least the main relations between the different parts, the function of each, and the function of the whole. The behaviourist would say that we understand when our response is adequate. But it is clear that there is a whole range of higher process, where such a criterion is inapplicable, or only applicable in the crudest way.

It is sometimes useful to distinguish "reason" from "understanding." This may be done by taking "reason" to be involved whenever the thought is consciously and deliberately controlled by the thinker with reference to a definite conscious end. Such a process always involves intellectual advance. We may understand something without any such advance, but where the understanding of anything raises a problem for us, thought, if it proceeds at all, proceeds at the higher level we call the rational. The outcome in such cases is the explicit and, as far as the individual is concerned, original judgment. Such a judgment will assume one of two forms—the formulation of a general principle, or the application of a general principle to a particular case. The process in ordinary life is always carried on to the second form ultimately, even when the first is aimed at to begin with.

We pass from the meaning of the whole to the meaning of individual words, testing in this way the individual concepts possessed, abstract and concrete. The possession of an abstract concept will depend on the process of abstraction having been carried to the required point, while the possession of a concrete concept will depend on perceptual experience, or compensation for its lack by ideal representation. Educationally of course the process does not terminate with the mere testing for the presence of the concept, though even that may result in intellectual advance through more complete organization. One of the main objects of education at this point is to develop more complete inner organization on the intellectual side. This is secured by passing, on the basis of the psychological, to the logical concept. The psychological concept is formed unreflectively for immediate practical use in the course of everyday experience. In consequence both in denotation and in connotation it is vague and often inaccurate. The logical concept, on the other hand, is the result of reflective reconstruction, and its denotation and connotation are exact. The transformation of the one into



the other is an epitome of the main work of education, so far as the higher thought processes are concerned.

Both the transforming of the psychological into the logical concept, and the reproduction of the sense of a passage read, may involve what might be called a complete cycle of thought. This always starts from a problem or problematical situation, and presents a number of distinct phases. The first phase is the understanding of the problem, involving conceptual process at the outset. The second phase is the active following of clues for its solution, an inductive process dependent on past experience ideally represented. The third phase is the suggested, and at first hypothetical solution, constructive and creative activity of imagination being involved. The fourth phase is the deduction of the results, which follow from this solution, and its verification on this basis.

We have used reading as an illustration of the education of thought. We might have illustrated from any other school subject, not equally conveniently, because language is itself the direct expression of thought, but so as to bring out the same principles. Thinking is a phase of behaviour—no more and no less. The higher processes are continuous with the lower, and we have essentially the same function in perceiving, representing, and understanding. Such training in thinking as the child obtains in school, apart from phenomena already discussed in the previous chapter, is relative to the content thought. But this fact merely confirms the position which language, rightly understood, has long occupied in the school as the chief instrument for the training of thought. The educationally significant aspect of real thinking is the inner organization which the successful facing of problematical situations involves. One final word in emphasis on “successful.” There is intellectual advance, not because of any exercise of muscles, or of a thinking “faculty,” but precisely because of this organization. It is generally recognized that one of the worst things for a child’s intellectual development



is to keep him at work much below his intellectual capacity. We also know that it is a mistake to ask him to face intellectual tasks beyond his powers. The explanation in either case is obvious, when we consider what thinking is, as the activity of the "growing point" of the individual mind.

#### REFERENCES FOR FURTHER READING

1. MONTESSORI: *The Montessori Method*. Heinemann.
2. MONTESSORI: *The Advanced Montessori Method*. Heinemann.
3. MILLER: *The Psychology of Thinking*. Macmillan.
4. DEWEY: *How We Think*. Heath.
5. CONSTANCE LONG: *The Psychology of Phantasy*. Baillière, Tindall and Co.
6. COLVIN: *The Learning Process*. Macmillan.
7. WATSON: *Psychology from the Standpoint of a Behaviourist*.
8. STURT. *Principles of Understanding*. Cambridge University Press.
9. HENDERSON. *Principles of Education*. Macmillan.

## CHAPTER XI

### THE SOCIAL GROUP

UP to the present we have been mainly concerned with the development of the individual human being, and have viewed him as a social being only incidentally, and with reference to individual development. Were each child educated at home under a private tutor, in the way described by Rabelais, Locke, or Rousseau, the psychology of education might terminate here. But the fact that formal education is, for the vast majority of the children of to-day, a school education, renders it necessary that we should devote attention to some of the psychological phenomena of school life, which have hitherto been passed lightly over. Both the school class and the larger school community itself are social groups, each having a collective social life of its own, of which the individual child becomes a partaker in going to school. Hence the psychology of education must needs discuss group psychology or collective psychology, in so far as that can be shown to have a bearing on the process of education.

One of the most serious defects of the educational theory of the past was the neglect of adequate consideration of the psychological phenomena of the class as a class, or the school as a school. The class is no more a mere aggregation of individual children, than the school is a mere aggregation of stone or brick walls and wooden partitions. The importance of *esprit de corps* was to some extent recognized in educational practice, more particularly in the Public Schools of England, but the psychology underlying it was practically a *terra*

*incognita* as far as educational theory was concerned. The educational theorist may, of course, defend himself by pointing out that group psychology is itself a recent development. No doubt that is true, but it is true largely because the educational theorist was not conscious of the need of a group psychology. Had he been so conscious, group psychology would have come into existence long ago, and would have come into existence because of the needs of the educator, as it ought, rather than because of the needs of the statesman and political theorist, as it actually did.

McDougall has recently increased the debt which education owes him by developing in his *Group Mind* the principles of group psychology, already sketched in outline in his *Introduction to Social Psychology*. His point of view, however, is not that of education, but that of political theory. We may attempt, therefore, to apply his main results to education, and at the same time to draw particular attention to points which he has passed over rather lightly, as of no special importance from the general standpoint of political theory, but which are of very great importance from the standpoint of educational theory.

### THE PSYCHOLOGICAL GROUP

How is a psychological group constituted? It is quite clearly more than a mere aggregate of individuals. In a well-known chapter on "The Nature of the Social Science,"<sup>1</sup> Herbert Spencer has asserted that "the character of an aggregate is determined by the character of its units." This would seem almost a truism. But it is no truism, nor is it the truth, if it is taken to mean that a social group is wholly determined by the character of the individuals composing it. It is not the truth, because the social group is no mere aggregate.

<sup>1</sup> *The Study of Sociology*, chap. III.

This fact becomes at once evident when we consider even the most primitive type of social group, the crowd or mob. The psychological crowd is obviously a whole, a unity. Two crowds, very similar in character, judging from their behaviour, may be composed of individuals differing widely in the two cases. The point is an interesting one, and important as an illustration of the very real psychological phenomena which are characteristic of the crowd, as well as of the way in which the crowd differs from higher types of social group. As regards the latter point, we shall return to it. In the meantime it is sufficient to say that the individual member of the crowd is very far from being able to realize himself as an individual, while he remains a member of the crowd. As regards the former, we might suppose that the crowd as a whole would represent in some way an average of the individuals composing it—average intelligence, average morality, average strength and persistence of will. If it were a mere aggregate, the crowd would certainly represent such an average of the individuals. As Gustave Le Bon has strikingly shown,<sup>1</sup> this is very far from being the case. The intelligence of the crowd is notoriously far below the average intelligence of the individuals composing it, and, not only so, but somehow different; the morality may be either far above or far below the average morality of the individuals, and the same is true as regards strength and persistence of will, if indeed we can speak of will or morality in such a case at all. The fact is, the nature of the crowd is in some way different from human nature, as manifested in the average, or any normal individual in the crowd. Individual human psychology does not wholly apply, because there are certain new factors—mental factors—operating in the crowd as such.

What are these new factors? We begin with a mere aggregate of individual human beings. The psychological

<sup>1</sup> See *The Crowd*.



crowd comes into existence, when, as a result of some circumstance or event, the individuals all think, feel, and act together. The gregarious instinct may be the cement which first binds the individuals together in some sort of mass. But the real psychological forces, which bring about the crowd effect, are sympathy and suggestibility. If the thoughts and feelings of the individuals in the mass are by any circumstance or event turned in the same direction, the psychological crowd is immediately constituted. Some measure of homogeneity in the individuals composing the mass may be necessary at the outset, but in general if the producing cause of the crowd is sufficiently powerful, that homogeneity may be found in the common elements of human nature present in all, though not present in any one in the identical proportions present in any other. It is because the nature of the crowd rests on these common elements of human nature that it is different from the nature of the average individual in the crowd. It is more crude and primitive, altogether more fundamental.

Le Bon has expressed what he calls the "Psychological Law of the Mental Unity of Crowds" in these terms: "Whoever be the individuals that compose a crowd, however like or unlike they may be in disposition, intelligence, mode of life, or occupation, the fact that they compose a crowd puts them in possession of a kind of collective mind, which makes them think, feel and act in a way different from that in which they would feel, think, and act in isolation."<sup>1</sup> The law holds absolutely, and without qualification, perhaps, only of the crowd, but traces of the same phenomena show themselves in all psychological groups at all levels. We shall inquire presently as to the extent to which we are justified in attributing a collective mind. But it is certain that psychical factors operate in all psychological groups as such from the simplest to the most complex, which,

<sup>1</sup> *Op. cit.*, p. 29.

though they operate in the individual minds, are not of the individual minds. In the simple crowd these factors depend mainly on sympathy and suggestibility. In higher types of social group they depend, as we shall see, on other conditions also.

In addition to sympathy and suggestibility we must recognize as an element entering into the mental constitution of all social groups what Le Bon fittingly calls a "sense or feeling of power," felt by each individual as a unit in the group, but arising from the existence of the psychological group itself, and the individual's consciousness of the group. The "sense of power" will inevitably lessen the control exercised by fear of the disapproval of others. Hence feelings and acts, which are normally repressed and inhibited, will no longer suffer such repression or inhibition. The influence of the crowd, acting through sympathy, will similarly abolish the control the individual normally exercises over his own feelings and thoughts, repressions and inhibitions being removed in this direction also. Further, with the practical effacement of individuality, the feeling of individual responsibility will also tend to disappear.

This last characteristic marks social groups at a much higher level than the mere crowd or mob. It is undoubtedly, as McDougall points out, one source of the extraordinary want of intelligence and foresight, so often shown in the decisions of bodies of men, trades unions, town councils, education authorities, even university faculties and senates. No one individual makes it his business, as he would in the case of any private decision, to look at the point under discussion in all its aspects. He leaves that to the others. He has no personal responsibility. What is everybody's business is nobody's business, and so the decision is taken without any real deliberation or serious thought on the part of anybody.

Exalted imagination, inferior reasoning, judgment deter-

mined by mere association of contiguity, or based on analogy—of such a nature are the intellectual processes in the crowd, and in every social group, so far as the crowd effect is present. On the side of feeling and action we may similarly expect emotion and impulse, sentiment and whim, determining action directly and inevitably, the higher inhibitions and restraints being, as we have seen, temporarily suspended. These characteristics ought to be kept in mind, for, under the conditions of collective teaching, there can be little doubt that we have the crowd effect produced on a somewhat extensive scale in the school class. We will return to the subject later.

### TYPES OF SOCIAL GROUP

McDougall, in his *Group Mind*, has classified social groups into (1) natural, and (2) artificial. The “natural” he subdivides into (a) those based on kinship, and (b) those based on geographical conditions; the “artificial” he similarly subdivides into (a) purposive, (b) traditional, and (c) mixed.<sup>1</sup> Though undeniably suggestive and useful, the classification is not entirely satisfactory psychologically. It is unsatisfactory because it does not yield us psychological types. For psychological purposes it seems better to revert to our classification of mental levels, and attempt to classify social groups on that basis—in accordance with the level of mental process which is normal to the group, and of which the group as a group is capable. We should thus distinguish social groups at the perceptual level, social groups at the ideational level, and social groups at the rational level. The historical “nation” in the evolution of the human race has been represented by social groups at all three levels, from the primitive horde to the highly developed nations of the modern world. Social groups at the three psychological

<sup>1</sup> See *The Group Mind*, p. 89.

levels we may designate, for shortness, the "crowd type," the "club type," and the "community type" respectively.

Another classification, which has psychological interest, but is biological rather than psychological, is a classification on the basis of the biological origin of the group, into "family type," "herd type," and "pack type." From the psychological point of view such a classification is interesting because of the motives which each type may be said predominantly to represent. And it might become of very particular interest to psychoanalysts in connection with Freudian theories. Nor is it without its educational interest, inasmuch as influences, which play a part in the education of the child, may emanate from social groups representing, if only temporarily, any one of the three types. At present, however, we prefer to adhere to the psychological classification according to levels.

We can now consider the question with regard to the mind of a crowd. The consciousness of the ordinary crowd is in the main a here-and-now consciousness. Its changes of mood, feeling, and behaviour may be kaleidoscopic, because the psychological factors, upon which these depend, operate in a random and lawless fashion. The crowd may be said to have no memories or sentiments belonging to it peculiarly as a group. Hence it can have no *esprit de corps*, as we call it—translated "group spirit" by McDougall. Its behaviour is controlled by the emotions and impulses of the moment. In no useful sense can we attribute to it a mind. Of course, it is largely a matter of convenience. We may, if we like, attribute a mind to a sea-urchin. But it seems more convenient to limit the term "mind" to an organized and relatively permanent system of psychical forces and factors, manifesting itself in such phenomena as memories, ideas, sentiments, which we do not find any trace of so low down the scale.

A "club" is banded together because of some common



aim, sentiment, or ideal. This may form the germ of a real group mind, though it may be a very partial and fragmentary kind of mind. There is no doubt that *esprit de corps* can come into existence, in however weak and imperfect a form. The common sentiment first, then the sentiment for the group as a group—that is the natural history of the process by which a “group spirit” is born. A “community” has continuity of mental life, the possibility of common purposes and ends, and these of a nature so comprehensive and complex that the individual members may realize to the full their own individuality by taking aspects and phases of the community end as their own individual aims and ends. Here we have a self-conscious entity, for which the highest level of mental process is possible. Here we can beyond question speak of a group mind.

One inevitably thinks of a nation as an illustration of the “community” type. In ancient times a single community was sufficient to constitute a nation. In our own day, when communities are brought so much nearer together by the railway, the telegraph, and the Press, the nation may organize within itself a great number of communities. But the same conditions, which led Aristotle to draw his distinction between *ἔθνος* and *πόλις* are still limiting conditions ruling the possibility of expansion of a nation. The psychological conditions which make the social group must be fulfilled; otherwise the nation is a nation merely in name. Psychologically regarded, then, a nation is a complex social group, which has attained a high level of psychological development, in that it has not merely common traditions and sentiments, but is capable of common purposes and ideals, and in that it represents, not merely a fragmentary part of the real life of the individual members, but gathers together and focuses practically their whole life. That a nation has a mind, in the sense in which we are understanding mind, does not admit of a doubt. The traditions, sentiments,

and ideals are not constituent parts of any individual mind as such. It is as a member of the group that the individual is conscious of the influence of these traditions, sentiments, and ideals. They manifest themselves, it is true, as influences in the individual mind, but they are not of the individual mind. Moreover, the nation is self-conscious in the individual minds, but the consciousness of the nation, though in the individual, is quite distinct from the individual consciousness.

From what we have already said, the conditions under which the higher types of social group come into existence can readily be deduced. In the first place, there must be some continuity of existence on the part of the group. Continuity may be either material or formal. That is, the body of members may continue unchanged, or the whole as a whole may continue while the individual members change. Most highly developed social groups possess both types of continuity. In the second place, there must be a measure of group self-consciousness. That is, there must be some idea of the group as a group in the minds of the individual members, which will function as the core of a group self sentiment. In the third place, interaction with other groups as groups, by way of co-operation, competition, conflict, and the like, will promote the self knowledge of the group, and in this and other ways, develop more fully the self sentiment, enriching and extending the idea of the group. Excellent illustrations of the effect in practice of this condition can be obtained from the influence of team games, or, in the case of nations, war. Contact of groups by way of competition always tends to bring into prominence differences of ideal, tradition, custom, and the like, establishing them and intensifying their influence. In the fourth place, there must be group organization. This implies differentiation and specialization of function in the individuals composing the group, or in subordinate groups. Such differentiation and specialization may be determined by a body of traditions and customs,

belonging to the group as a group, and determining the relation of the individuals to one another, and to the group. Or the organization may be consciously developed by the group itself. Or, finally, the organization may be imposed primarily from without.

We have already indicated the important part which *esprit de corps*, or, as McDougall translates, the group spirit, plays in the case of high-level social groups. This is really group consciousness on its affective side. It manifests itself most clearly in group loyalty, which may be taken as equivalent in group life to the self-respect of the individual. McDougall defines *esprit de corps* as "the idea of the group with the sentiment of devotion to the group, developed in the minds of all its members."<sup>1</sup> We may profitably consider the effects of a developed group spirit with particular reference to the crowd effect, which we have already discussed.

In the first place, intellectually, it tends to the raising of the intellectual level. If a social group is properly organized, the collective opinion is superior to individual opinion, as far as the average individual is concerned. This is a very important point, more especially as it is contrary to what we should expect from what we have already seen in the case of the crowd. The raising of the intellectual level is the result of the co-operation of several factors. Because of group loyalty there is subordination of immediate and selfish ends to the good of the whole, and one highly distorting medium, through which individual opinion manifests itself, is thereby removed. Then the organization of the group leaves the decision concerning policy and the like in the main to those most capable of judging, but nevertheless responsibility for the decision come to is felt by every individual as a member of the group, for the sake of the good name of the group, or its prosperity, or both.

In the second place, morally, the effects are not quite so

<sup>1</sup> *The Group Mind*, p. 63.

clear. As a general rule, and provided we forbear to judge individual acts from the standpoint of individual morality, the moral level, like the intellectual, is raised. There is control of each by all, and through organization the moral influence of the leaders tends to become more or less predominant, without the individuals abdicating the right of private judgment. It must, however, be remembered that the emphasis among moral qualities, as far as the group is concerned, tends to be different from that characteristic of individual morality.

In addition to these more or less permanent and constant effects of the group spirit in high-level groups, we must also recognize, as in the case of the simple crowd, that the experience of the individual as a member of the group yields a certain emotional satisfaction, which is unquestionably a powerful motive in the development of group life. This emotional satisfaction has its source partly in the gregarious instincts, in its crude form, and partly in the consciousness of support and sympathy, which involves the same instinct in a more developed form. It is this satisfaction that underlies the deliberate cultivation of group life on a vast scale in savage communities, and also what McDougall has called the "multiple group consciousness" of the highly civilized man, who belongs to a great number of social groups, organized for different ends and purposes, but all satisfying this need. McDougall thinks that this fact is of the highest importance, because it tends to prevent, or to counteract, the division of the whole population into merely occupational groups, that being practically the only natural condition of grouping that remains in civilized life. Further, the existence and vitality of the subordinate groups appears to be a condition, upon which the energy, stability, and richness of the life of the wider groups, like the nation, depend. At the same time there would seem to be limits in this direction to the development of group life, for it can hardly be doubted, that where the



development of subordinate groups becomes very complex, and especially if the group spirit is relatively strong in some of these, there is a weakening of the group spirit in the comprehensive whole.

### SCHOOL AND CLASS

Considerations of space forbid our discussing in detail the application of the principles of collective psychology to school education. But as regards the main points he who runs may read. There may be difference of opinion as to the sense in which we can speak of a collective mind, but the facts of group life are beyond dispute. And, whether we call it a collective mind or not, there is in social life a psychological entity which is a cause, not an effect, or less still a mere abstraction. It has been too hastily assumed that this fact involves the sacrifice of freedom and individuality. There is no need that it should do so in any valuable sense of either. Man is by nature a social animal. His freedom and his individuality can only be realized in the fullest sense in social situations. It is all the more necessary that we should understand, and in some measure control, the social situations that arise in the course of his education.

It is clear that the doom of collective teaching is sealed, that is, of collective teaching of the type, and on the scale, usual in our schools hitherto. That collective teaching tends to produce the type of mind which we call "flabby," with a lack of initiative and independence of thought, has long been recognized. One of the main reasons for this undesirable result appears, when we consider that in collective teaching the class functions as a social group of the "crowd" type, and the greater the apparent success of the teaching in the eyes of the onlooker, the greater the extent to which the crowd effect is realized. On the other hand, it is very questionable whether "individual work" is the true remedy, or

at any rate the whole remedy. Positive intellectual evils and moral deficiencies of collective teaching may thereby be avoided. But the positive contribution to the social development of the child will be meagre enough. Can the school not aim at something more ?

Some years ago, when the question of moral education was in the ascendant, great stress was laid on the corporate life of the school as a factor in moral development. The teaching was sound, for corporate life is without doubt of high moral significance. But failure to see wherein its real significance lies can only end in mere lip service to the principle that corporate life ought to be cultivated. The significance lies in the fact, that, so far as corporate life is developed, we have the "community" type of social group realized.

In a boarding-school, especially one with a long history and tradition, we have a very complex type of social group, which, like the nation, gathers together and focuses all the activities of the individual life, and yet permits of numerous subordinate grouping within itself, and can allow free play to individuality within the limits set by the ends, traditions, and customs of the school community. Under such conditions all the educational values of group life can be secured, though it may be with the sacrifice of some values, which only home and family life can give. In the ordinary day school it is perhaps inevitable that the class should be the dominant group. This is probably a disadvantage, in that it limits the possibilities of social organization. But it need not be a serious disadvantage provided the "community" type of social life can be developed in the class. In any case, even in the day school, the wider school community still remains, and much may be done, even under such conditions, to give it reality and force. The principles that ought to guide such action as is taken are easily deducible from the phenomena of group life to which we have drawn attention. In front of the child is the complex community life of the nation.

Some part in this community life he cannot help playing. The extent to which the ideals of freedom and individuality, together with responsibility, can be realized in the school community will largely determine the efficiency with which he plays his part in the life of the nation. The issue is not between individual freedom and social life. Social life is an unalterable fact; it is a question therefore of individual freedom in social life.

## REFERENCES FOR FURTHER READING

1. LE BON: *The Crowd, a Study of the Popular Mind*. Fisher Unwin.
2. McDUGALL: *The Group Mind*. Cambridge University Press.
3. ROSS: *Social Psychology*. Macmillan.
4. SCOTT: *Social Education*. Ginn and Co.
5. NUNN: *Education, Its Data and First Principles*. Arnold.
6. MACIVER: *Community*. Macmillan.
7. MACIVER: *Elements of Social Science*. Methuen.
8. SIMPSON: *An Adventure in Education*. Sidgwick and Jackson.
9. PARKHURST: *Education on the Dalton Plan*. Bell.





# INDEX

- Acquisition, 49, 57
- Activity, concept of, 8
- Adler, A., 60, 80, 89, 113, 139
- Æsthetic attitude, 104 f.
- Æsthetics, experimental, 104
- Aikins, H. A., 147
- Alternating personality, 103
- Angell, F., 178
- Anger, 49, 50, 86
- Animal behaviour, 2, 19
  - psychology, 62, 170
- Anthropomorphism, 8
- Appetites, 82, 125 ff.
  - acquired, 127, 129 ff.
- Appetitive tendencies, 50
- Aristotle, 215
- Arithmetic, 160
- Assimilation, 171
- Association Method, 120
- Associationists, 70, 175
- Associative shifting, 171
- Attention, 30, 36, 125, 148
- Attitude, or set, 171 f.
- Autonomic factors, 102
  - system, 53, 109
- Bagley, W. C., 168, 178, 182
- Baldwin, J. M., 86, 88, 107, 126
- Ballard, P. B., 158
- Bartholomäi, 188
- Baudouin, C., 90 ff., 96, 107
- Behaviour, 1, 11, 13, 25, 29, 46 f.,
  - 91, 108, 113, 133, 183, 201, 206
  - animal, 2, 19
  - ideomotor, 62
- Behaviourism, 10 ff., 111, 175,
  - 183, 201 ff.
- Binet, A., 144, 145, 148, 151 f.
  - and Simon, 151, 154, 163
  - Scale, 151 ff.
- Bridges, 153, 163
- Brill, A. A., 139
- Brown, W., 148, 163
- Bullough, E., 105, 107
- Bunyan, 198
- Burt, Cyril, 143, 148 ff., 153, 161, 163
- Cannon, W. B., 53, 60
- Capacities, 40 ff., 140 ff.
- Cartesian standpoint, 133
- Cathartic function of play, 102, 104
- Censorship, 24, 80
- Central factor, 146 ff.
- Character, 64, 96
- Child, the difficult, 122
- Cicero, 164
- Classification of instincts, 48 ff.
- Cohesion, 31 f.
- Collective mind, 211, 219
  - teaching, 219
- Colvin, S. S., 182, 207
- Compensation mechanism, 72, 117
- Complex, 75, 77, 83, 119 ff., 135,
  - repressed, 76, 116, 135
- Compromise formation, 115, 116
- Conation, 175
- Conceptual process, 204
- Consciousness, 11, 12, 20, 36, 110, 118, 121
  - determinants of, 23 f.
  - of Self, 134, and *passim*
- Conscious process, 21, 33 f.
- Conservation, 26 ff.
  - of energy, 15 f.
- Coover, J. E., 178
- Correlation coefficient, 146
- Corporate life, 220
- Coué, 90, 97
- Courtship, 49, 57

- Cross education, 180 f.  
 Crowd, 210 f.  
     effect, 94  
     mind, 214  
 Curiosity, 49, 57  
 Cyclic overlap, 162  
  
 Dante, 199  
 Darroch, A., 6  
 Day-dreaming, 193  
 Defence mechanism, 72, 117, 118  
 Deferred reaction, 62  
 De Sanctis, 158  
 Determinism, 137 f.  
 Development, by stimulation, 65  
     emotional, 86  
     mental, 61 ff., 141  
     stages of, 61 f.  
 Dewey, J., 6, 207  
 Diagnostic tests, 150  
 Disciplinary conception, 80  
 Discipline, 132, 164 ff., 177  
 Disposition, 25, 29, 36, 51, 113,  
     125, 126  
     natural, 43  
 Dissociation, 93, 96, 102 ff.  
 Doctrine of formal discipline,  
     165 ff.  
 Dreams, 120  
 Drever, J., 39, 107, 139  
  
 Ebbinghaus, H., 151  
 Ebert, E., 178  
 Eddy, Mrs., 119  
 Education, definition of, 1 f.  
     experimental, 158  
     philosophy of, 4  
     theory of, 4 f., 205, 208  
 Educational abilities, 158 ff.  
 Effort, 166  
 Emotions, 45, 51 ff., 63, 75, 114 f.  
     primary, 59, 84, 111, 129  
 Empathy, 104, 105 f.  
 Endopsychic process, 24, 25, 28,  
     31, 71, 110, 116  
 Ends, valuation of, 2  
 Energy, conservation of, 15 f.  
  
 Energy, psychic, 78  
     transformations of, 16  
 Epicritic sensibility, 55  
 Epiphenomenalism, 14  
*Esprit de corps*, 208, 214 f., 217  
 Ethics, 5  
 Experimentation, 57, 81  
  
 Facilitation, 176  
 Faculty Psychology, 85, 167  
 Fear, 49, 56, 57  
 Fighting tendency, 102  
 Flight, 57  
 Flügel, J. C., 139  
 Formal discipline, 165 ff., 179  
     training, 175 ff.  
 Fracker, G. C., 178  
 Free association, 120  
 Freedom, 63 f.  
 Freud, S., 25, 64, 70, 71, 80, 81,  
     110, 113, 119, 120, 125, 128,  
     137  
 Freudian censorship, 24, 80  
     psychology, 49, 66, 79, 81, 109,  
     110, 121 f., 124, 126, 214  
  
 General intelligence, 146 ff.  
 Glandular activity, 53, 184, 203  
 Goddard, H., 154  
 Gregarious instinct, 49, 57, 82, 85,  
     91, 94, 113, 211, 218  
 Groos, K., 100, 103  
 Group psychology, 208 ff.  
  
 Habits, 23, 126, 167, 178  
 Hall, G. S., 188  
 Hardwick, 155, 163  
 Hart, B., 116, 117  
 Hartmann, B., 188  
 Head, H., 55  
 Heck, W. H., 182  
 Henderson, E. N., 207  
 Herd instinct, 48, 84, 113  
 Hierarchy, 77  
 Hingley, R. H., 139  
 Hobhouse, L. T., 172  
 Homer, 199

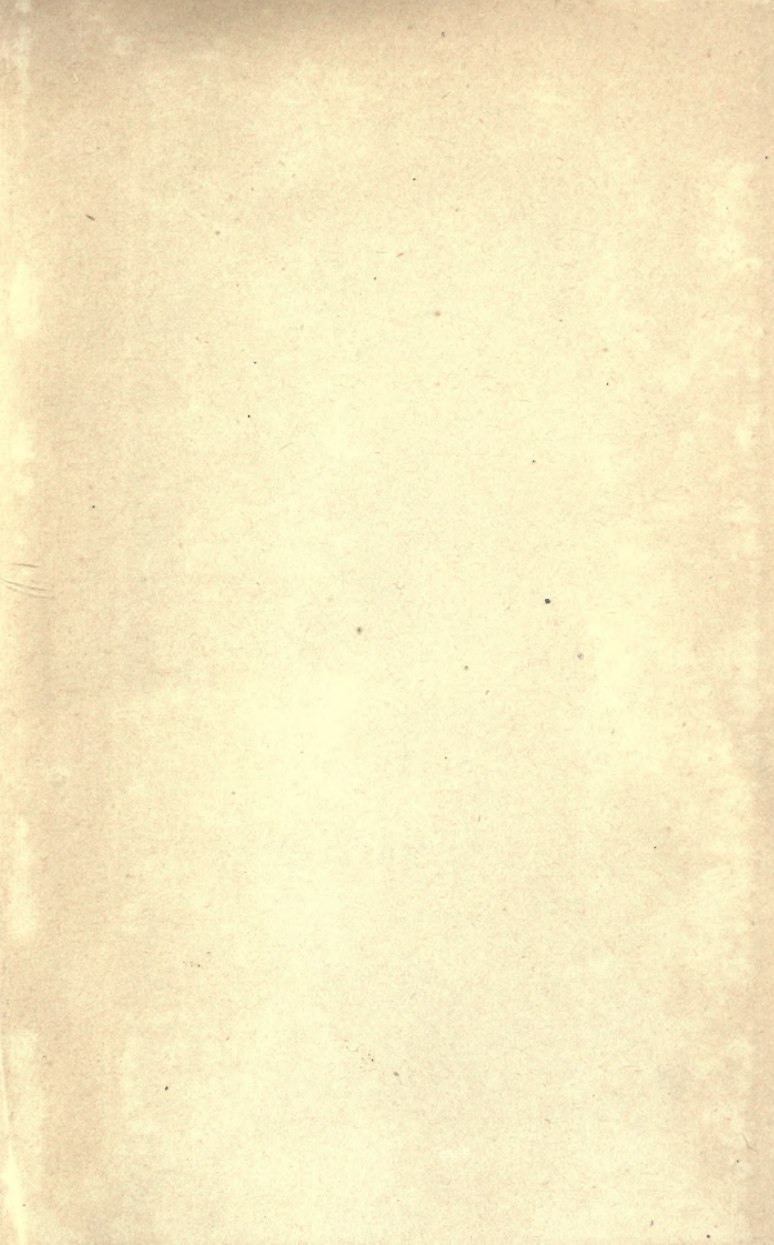
- Hume, 70  
 Hunger, 49, 50, 57  
 Hunting instinct, 57  
 Hypnotism, 123  
  
 Ideal, 138, 178, 193  
 Ideas, 27, 92 f.  
 Ideational level, 77 f., 112, 213  
 Ideomotor action, 90 ff.  
     behaviour, 62  
 Ideoreflex, 91  
 Imagery, 145, 194  
 Imagination, 97, 189 ff.  
     aesthetic, 192, 193, 195 ff.  
     cultivation of, 184, 189 ff.  
     pragmatic, 192, 193  
 Imitation, 49, 57, 86, 89 ff., 100  
 Impulsion, 47  
 Inattention, 30  
 Industry, 6, 43  
 Inferiority complex, 89, 113  
 Inhibition, 92, 97, 176  
     by habits, 67  
 Instincts, 23, 42, 46 ff.  
     and emotion, 51 ff.  
 Intelligence, 43, 45, 141 ff.  
     quotient, 154  
     tests, 44, 142 ff.  
 Interactionism, 14  
 Interest, 58, 125, 167  
 Interests, 42, 120, 125 ff.  
     acquired, 80, 125  
 Introspection, 11, 25, 33  
 Isocrates, 164  
  
 James, W., 25, 42, 51, 52, 53, 54,  
     64, 67, 68 f., 132, 139, 177  
 Janet, P., 79  
 Jennings, H. S., 171  
 Jones, E., 139  
 Joy, 52 ff.  
 Jung, C. G., 25, 64, 71, 120, 139  
  
 Keller, Helen, 187  
  
 Ladd, G. T., 20  
 Lange, K., 188  
  
 Language, 201 f.  
 Laurie, S. S., 165, 182  
 Law of complication of behaviour,  
     74  
     of development by stimulation,  
         65  
     of effect, 169, 172  
     of exercise, 169, 172  
     of fusion, 73  
     of inhibition by habit, 67  
     of readiness, 169, 172  
     of retentiveness, 28  
     of reversed effort, 96  
     of selection, 65  
     of transiency, 68  
     of transference, 70  
 Learning, 168 ff.  
     animal, 170  
 Living organism, 7 ff., 11, 18, 39,  
     41, 108, 109  
 Locke, 208  
 Locomotion, 57  
 Long, Constance, 207  
 Lotze, 17  
  
 McDougall, W., 5, 16, 25, 42, 47,  
     51 f., 56 ff., 64, 70, 73 f., 76 f.,  
     80, 83, 84, 90, 91, 93 ff., 102,  
     107, 136, 139, 209, 212 ff.,  
     217, 218, 221  
 MacIver, R. M., 221  
 Make-believe, 101 f.  
 Malebranche, 70  
 Marshall, H. R., 139  
 Meaning, 34 ff., 58, 125, 205  
 Mechanics, 81, 85, 110  
 Mechanism, 46, 108  
     compensation, 72, 117  
     defence, 72, 117, 118  
 Medicine, 6, 43  
 Memories, 23, 28  
 Mental development, 61 ff., 141  
     laws of, 64 ff.  
 Mental tests, 142 ff.  
 Metaphysics, 12  
 Meumann, E., 144, 179, 188  
 Mill, James, 70

- Miller, I. E., 207  
 Montessori, 186, 187, 189, 196 ff., 207  
 Morgan, C. Lloyd, 16, 34, 37  
 Motor adaptation, 191  
 Münsterberg, H., 6, 25  
  
 Nancy School, 90  
 Nausea, 49, 57  
 Nunn, T. P., 6, 32, 37, 221  
  
 Olsen, J., 188  
 Organic resonance, 53  
  
 Parallelism, psychophysical, 16 f.  
 Parental instinct, 49, 57, 60, 86  
 Parkhurst, Helen, 221  
 Partial activity, 171  
 Percept, 27  
 Perceptual level, 78, 213  
 Personality, 108 ff., 123, 132 ff.  
     alternating, 103  
 Pfister, O., 139  
 Phantasy, 193, 196, 199  
 Philosophy, 5, 6, 10  
 Physical process, 19  
 Physiological state, 8  
     process, 14 f.  
 Physiology, 15, 16  
 Plato, 164  
 Play, 49, 56, 57, 81, 99 ff.  
     function of, 100 f.  
 Pleasure Principle, 66 f., 103,  
     126 ff., 196  
 Point scale, 155 ff.  
 Political theory, 5  
 Porteus, 158  
 Prehension, 57  
 Prestige, 94, 96, 98  
 Prince, Morton, 25, 76  
 Projection, 115  
 Protopathic sensibility, 55, 102  
 Psychical adaptation, 184, 185  
     integration, 21, 24, 184  
     process, 19 f., 26, 31, 34  
 Psychoanalysis, 118 ff., 196  
 Psychograph, 143  
 Psychologist's creed, 5  
 Psychology, definition of, 1, 11, 18  
     educational, 17, 18, 27, 40  
     pure, 7  
 Psychopathology, 64  
 Psychophysical problem, 14 f.  
 Pugnacity, 57, 86  
  
 Quintilian, 164  
  
 Rabelais, 208  
 Rationalization, 115  
 Reaction formation, 115, 116, 118  
     pattern, 65  
 Reactive tendencies, 50  
 Reality principle, 66 f., 82, 103,  
     126 ff., 196  
 Reason, 78, 205  
 Regression, 128, 129  
 Reinforcement, 176  
 Repression, 71, 82, 103, 114 f., 121  
 Respiration changes, 53  
 Retentiveness, law of, 28, 141  
 Reversed effort, law of, 96  
 Rivers, W. H. R., 56, 90, 91, 93,  
     94, 102, 107, 115  
 Ross, E. A., 221  
 Rousseau, 149, 205  
 Ruediger, W. C., 178  
 Ruger, H. A., 178  
 Rusk, R. R., 35, 194  
  
 School, 114, 118 ff., 208 ff., 219  
     subjects, 160  
 Scripture, E. W., 180, 181  
 Selection, 29 f.  
     law of, 65  
     natural, 29  
 Self, 96, 109 ff., 131 ff.  
     abasement, 57  
     determination, 9 f.  
     display, 49, 57  
     idea of, 77, 112  
     ideal of, 79, 138  
     preservation, 48  
     sentiment, 77, 80, 112  
     tendencies, 89, 94



- Semon, R., 8, 25  
 Sense experience, 188, 191  
     dorgans, deveolent of, 185 f.  
     training, 183, 185 ff.  
 Sensory defects, 181  
 Sentiment, 23, 63, 76, 77, 112, 138  
     master, 77  
     self, 77, 80, 112  
 Sex appetite, 49  
     instinct, 48, 57, 85  
 Sexuality, 124  
 Shakespeare, 199  
 Shand, A. F., 25, 59, 64, 80  
 Sherlock Holmes, 167  
 Sidis, B., 117, 139  
 Significance, 34, 37  
 Simpson, J. M., 221  
 Smith, Adam, 70, 83  
 Social group, 208 ff.  
     types of, 213 ff.  
 Social interaction, 81, 82  
 Sorrow, 59 ff., 89  
 Soul, destiny of, 12  
 Spearman, C., 147, 148  
 Spelling, 160 f.  
 Spencer, H., 209  
 Spinoza, 70  
 Stanford Revision, 154  
 Starch, D., 165  
 Stern, W., 144, 145  
 Stout, G. F., 16, 20, 25, 28, 36,  
     37, 163, 172, 201  
 Sturt, H., 207  
 Sublimation, 82  
 Suggestibility, 49, 57, 81, 90 ff.,  
     211, 212  
 Suggestion, 90 ff.  
     hypnotic, 94, 95  
 Sympathy, 49, 57, 81, 83 ff., 104,  
     211, 212, 218  
     active, 83  
 Tarde, G., 87  
 Teacher, 12, 13, 119, 121, 123, 124,  
     129, 142  
 Temperament, 45  
 Tendencies, appetitive, 50  
     emotional, 51, 120  
     native, 40 ff., 169  
     reactive, 50  
 Tension, 24, 103 f.  
 Terman, L. M., 154, 163  
 Tests, diagnostic, 150 ff.  
     mental, 142 ff.  
 Thalami, 54, 55  
 Thinking, 133, 184, 201 ff.  
 Thomson, G. H., 158, 163  
 Thorndike, E. L., 60, 86 ff., 144,  
     145, 147, 148, 159, 163, 168 ff.,  
     175 ff., 181, 182  
     scale for handwriting, 159  
 Training, formal, 164 ff.  
     transference of, 175 ff.  
 Trotter, W., 60, 113  
 Types, theory of, 114 f.  
 Unconscious, the, 22 ff., 31, 71,  
     110, 118  
     psychology of, 24  
 Vocalization, 57  
 Volition, 88, 89, 136 ff.  
 Wallin, J. E. W., 181  
 Ward, J., 139  
 Watson, J. B., 92, 107, 111, 139,  
     201, 207  
 Wells, F. L., 139  
 Whipple, G. M., 144, 149, 163  
 White, W. A., 60, 139  
 Will, the, 136  
 Winch, W. H., 180  
 "Wish," 114, 116, 125, 136  
 Wissler, C., 147  
 Woodworth, R. S., 60, 80, 177  
 Yerkes, R. M., 60, 80, 177  
     Point Sale, 155 ff.  
 Yoakum, C. S., and Yerkes,  
     163









191126

Psych.  
D775i

Author Drever, James

Title An introduction to the psychology of education.

University of Toronto  
Library

DO NOT  
REMOVE  
THE  
CARD  
FROM  
THIS  
POCKET

Acme Library Card Pocket  
Under Pat. "Ref. Index File"  
Made by LIBRARY BUREAU

Coll. Educ. Temp.

